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ABSTRACT

This report examines the 2000 teacher labor market in each Australian state and territory, projects demand and supply for teachers to 2003 (and up to 2010), and considers issues likely to impact the balance between demand and supply. Information comes from state and territory education authorities and other sources. During the 1990s, Australia's teaching workforce increased by about 11 percent. Recruitment difficulties were experienced during 2000 in several disciplines (particularly mathematics and science) and in rural and remote regions. State and territory governments use various initiatives to address recruitment difficulties. Initiatives are intended to attract more well-qualified young people into teaching through financial and other incentives. Graduates are the largest single source of new recruits to public schools. Recruitment needs in government and non-government schools will be approximately 12,000-13,000 from 2000-2003 (mainly replacement demand). Three key issues that will likely have a significant impact on the teacher labor market between 2005 and 2010 are student enrollment trends, aging of the teacher workforce, and the outlook for science and mathematics teachers. Areas for improvement include more comprehensive information on teachers in the teaching pool and more reliable data on inflows and outflows from teaching. (Contains 23 bibliographic references.) (SM)

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Demand and Supply of Primary and Secondary School Teachers in Australia

July 2001

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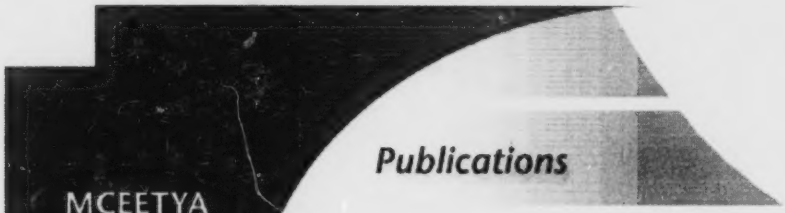

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Demand and Supply of Primary and Secondary School Teachers in Australia (July 2001)

Background
In accordance with a decision by Ministers at the 6th MCEETYA Meeting (Melbourne 1997), the Conference of Education Systems Chief Executive Officers (CESCEO) put into place procedures to enable annual monitoring and reporting on the labour market for teachers. This paper is the second of these reports that are produced biennially.

The paper was forwarded to Ministers at the 12th MCEETYA meeting (Melbourne, 2001). Council noted the report and agreed that it should be made publicly available via the MCEETYA website.

Where to find a copy

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Executive summary

The report examines the state of the teacher labour market in each Australian State and Territory in 2000, projects demand and supply for teachers to 2003 and, for the longer term period to 2010, considers some issues which are likely to have a significant impact on the balance between demand and supply. The analysis is based on information provided by the State and Territory education authorities and data from other sources.

Trends during the 1990s

During the 1990s, the teaching workforce increased by about 11 per cent across Australia with most of the increase occurring in the primary sector. While total teacher employment grew in every State and Territory, growth was especially strong in New South Wales, Queensland, Western Australia and the Northern Territory. Primary sector teacher employment grew in all jurisdictions but secondary sector teacher employment fell in three, namely Victoria, South Australia and Tasmania.

By 1999 there were 239 000 teachers (215 000 in FTE terms) employed in Australian schools, divided almost equally between primary and secondary schools. Almost 80 per cent of teachers were employed on a permanent full-time basis, with 10 per cent employed on a permanent part-time basis and 11 per cent on a fixed term contract. Almost 80 per cent of teachers in primary schools were female while the gender balance was about even in secondary schools. The average age of teachers was around 42.

The state of the teacher labour market in 2000

The early 1990s were a period of teacher surplus in Australia. More rapid growth in teacher demand during the later part of the 1990s led to a gradual tightening of the teacher labour market. By the end of 2000 the education authorities in the States and Territories reported that the teacher labour market was broadly in balance across Australia, both in the primary and secondary sectors.

Recruitment difficulties were nonetheless being experienced during 2000 in a number of disciplines and in rural and remote regions. Vacancies for mathematics, science and information technology (IT) secondary school teachers have been hard to fill in all States and Territories. Mathematics teachers have been the hardest to fill but recruitment difficulties in this and the science and IT areas are of long standing. Other subject areas experiencing some recruitment problems, although not necessarily in all States and Territories, include modern foreign languages and industrial arts/technology. Most States and Territories indicate that, in addition to these specialisations, teachers in general are hard to recruit for positions outside the metropolitan and larger urban centres.

States and Territory governments have used a number of initiatives to address these recruitment difficulties. Broadly these initiatives have been aimed at attracting more well-qualified young people into teaching, through financial and other incentives. These measures also generally include an element of targeting specialisations in short supply. Some States and Territories also have measurers designed to attract teachers to country locations.

Other English speaking countries are experiencing similar trends in their teacher labour markets. New Zealand, the USA, the UK and, to a lesser extent, Canada all report some recruitment difficulties in the kind of subject areas that are hard to fill in Australia as well. In New Zealand and the USA teachers from particular ethnic backgrounds, such as Maori in New Zealand, and Spanish and black American in the USA, are also highly sought after. The UK has been reported as having been actively recruiting in Australia in certain specialisations.

Demand and supply projections to 2003

The report makes an assessment of the possible trends in demand and supply of teachers to 2003. This year was chosen because it is the most forward year for which estimates of future graduate numbers can be made from existing enrolments in initial teacher training courses. This leads to greater accuracy in the projections for teacher supply.

Methodology for projecting demand and supply of teachers

Demand in the report was estimated as the sum of growth demand and replacement demand.

Growth demand accounts for increases in the teacher workforce and is determined by enrolment trends and Student to Teaching Staff ratios (STRs), which are a function of government policies. For the purpose of the report, STRs were assumed to remain at 1999 levels. Growth demand for the period to 2003 was estimated at less than 1 per cent of the workforce.

Replacement demand accounts for retirements, resignations and other forms of separation. Data on government schools indicates that separation rates, which include mainly retirements and resignations, have been of the order of 3 per cent of the permanent workforce nationally, although there is wide variation between States and Territories. Somewhat higher separation rates were used for the period to 2003, due mainly to an expected increase in the retirement rates during that period. Separation rates for non-government schools were set at lower rates because resignation rates have been assumed to be lower in non-government schools. For the purposes of projections in this study, it was assumed that teachers taking extended leave (who represent between 6 and 8 per cent of the permanent workforce in any one year) are replaced by teachers returning from extended leave.

Supply of new teachers comes from new graduates, migration, teachers registered with the education authorities for positions in government schools, the pool of casual and relief teachers, former teachers outside the labour force or not working in the profession who may move into teaching, and teachers returning from leave. The report has been able to quantify the significance of most of these sources.

Graduates from initial teacher training courses at undergraduate and postgraduate level have comprised around 4-5 per cent of the teaching workforce annually; net migration has been contributing another one half of a per cent of the workforce per year; the number of teachers on employment lists in the four States which have such a system (namely New South Wales, Queensland, Western Australia and South Australia) was over 33 000; and the pool of relief and casual teachers has some 30 000-40 000 teachers in it. However, no reliable information is available on the number of teachers outside the profession who could be available for teaching.

Data provided by the States and Territories indicate that graduates are the largest single source of new recruits to government schools in any one year. In 1999 they comprised 45 per cent of all recruits into permanent and contract positions of at least one term in length. The remaining 55 per cent came from one of the several other sources described above.

Adequacy of graduations for meeting future teacher needs

Using the assumptions described above the report estimates that recruitment needs in government and non-government schools will be of the order of 12 000-13 000 in the years between 2000 to 2003. Most of this will be replacement demand.

Some of this recruitment arises because of movement of teachers between government and non-government schools, across states and between jurisdictions. The level of recruitment due to growth in teacher requirements and losses from teaching (i.e. net demand) is difficult to estimate but recent

work suggests that it could be of the order of 2.9 per cent of the teacher workforce plus growth demand, or 8500 teachers on average in each of the four years to 2003.

The number of graduates available to take up positions during the same period is estimated to rise from 8300 in 2000 to 9800 in 2003. Comparing this level of teacher graduations to the estimated demand for new teachers suggests that graduations should be adequate to meet the need for new teachers at the national level. The same conclusion would be reached if one applied the finding that, in recent years, experienced teachers have filled just over half the recruitment needs in the government sector and graduates just under half.

It is not possible to undertake a similar analysis for each State and Territory because of data limitations. The principal data deficiency is the absence of accurate data on net demand for teachers within each jurisdiction. Consequently it has not been possible to assess with confidence whether, despite an expected adequate number of teacher graduations at the national level, some States and Territories might face a tightening in their teacher labour market.
There is some mobility of teachers, especially new graduates, across State and Territory boundaries which can assist in the allocation of teachers to where they are most needed. Also, the education authorities and schools have other options at their disposal for overcoming recruitment difficulties, should these arise, in the short term.

Pressures on the teacher labour market in the longer term (to 2010)

Although detailed projections were not made for the period post 2003, the report examined three key issues that have been identified as likely to impact significantly on the teacher labour market within the next five to ten years (i.e. between 2005 to 2010). These key issues were student enrolment trends, the ageing of the teacher workforce and the outlook for science and mathematics teachers.

Student enrolments over the next ten years are expected to grow at a slower rate than in the 1990s. Moreover, unlike the 1990s, a greater proportion of the increase will be in the secondary school sector (60 per cent). Overall, these enrolment trends suggest that the demand for teachers arising from enrolment growth in the period to 2010 will be relatively modest.

A more important source of demand for teachers during this decade will be the expected upsurge in retirements. In 1999 over 45 per cent of secondary school teachers were over the age of 45 and over 23 per cent were over the age of 50. Based on past experience and retirement intentions, the 50 years and over group will retire by 2010 as will some in the age group 45 to 50 years. Accordingly retirements as a proportion of the workforce is expected to rise significantly with the impact starting to be felt in the early years of the current decade and accelerating in the second half of the decade. This has significant implications for the teacher labour market in all States and Territories.

Mathematics and science teachers have been difficult to recruit for a long time. There is some evidence, analysed in this report, to suggest that the supply of mathematics and science teachers could in the next decade fall below existing levels. This, combined with the ageing of the existing teacher workforce, would place this segment of the teacher labour market under severe pressure.

Limitations of data on the teacher labour market

The report has identified some deficiencies in existing data on teachers which limit the kind of supply and demand analyses that can be undertaken. The report identifies five broad areas for improvement:

- consistent and quantitative information on recruitment difficulties being experienced, including by subject area and location;

- better and more frequent data on the specialisation of teachers and graduates and more information on the characteristics of teachers in the non-government sector;
- more comprehensive information on teachers in the teaching pool, that is those teachers not currently employed as permanent or contract teachers but who are available for such positions;
- more reliable data on inflows and outflows from teaching, particularly on losses from teaching at the State and Territory level; and
- information on practices within the education system used to adjust to recruitment difficulties.

Some of these areas are being addressed by State and Commonwealth authorities. More work needs to be done on others.

Introduction

This is the second report on teacher supply and demand prepared on behalf of the Conference of Education Systems Chief Executive Officers (CESCEO). The first report was published by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in 1999.

In 1997 MCEETYA requested CESCEO to establish arrangements for the regular monitoring of supply and demand in the teacher labour market. In response to this request, in September 1997 CESCEO set up the Working Party on Supply and Demand for Teachers with responsibility for preparing a report on the supply and demand for teachers in association with the then Department of Employment, Education, Training and Youth Affairs (DEETYA). The Working Party comprised representatives from each of the State and Territory education departments.

The first supply and demand report was prepared by DEETYA in conjunction with the Working Party. This second report was prepared by the Department of Education, Training and Youth Affairs (DETYA) and the Working Party.

The report focuses on three principal matters:

- The state of the teacher labour market in 2000, nationally and by State and Territory (chapters 1 to 4);
- The outlook for the teacher labour market to 2003 (chapters 5 to 7); and
- Possible sources of significant pressure in this labour market into the latter part of the current decade (chapter 8).

The conclusions of the report are at Chapter 9. That chapter also comments on the limitations of the available data for supply and demand studies.

In preparing this report DETYA has made considerable use of data and information about government schools provided by the State and Territory education authorities through their Working Party representatives. These data were provided as part of a survey of the education authorities conducted in the second half of 2000. Use was also made of information from the State Labour Economics Offices (LEOs) of the Department of Employment, Workplace Relations and Small Business (DEWRSB).

Note: Unless otherwise stated, all data about teachers in this report refers to teachers in government and non-government schools. Where data specifically relates to government schools, they are described as such.

PART A

THE RECENT PAST

Chapter 1

A profile of the Australian teaching workforce in 1999

School teachers can be divided broadly into two categories:

- teachers employed by the school authorities on a permanent or fixed term basis (i.e. 'regular' or core teachers) and;
- temporary relief or casual teachers, who are employed to fill in for regular teachers (who are away on sick leave or undertaking training or for some other reason) and who are located in the 'teacher pool'.

In 1999 (latest available data), there were 239 300 teachers employed on a permanent and fixed term contract basis in Australian primary and secondary schools (ABS 2000). The vast majority of these teachers are employed on a full-time and permanent basis. According to data from the 1999 Australian College of Education (ACE) survey of teachers (Dempster et al 2000, in process of publication), 78.7 per cent of teachers (excluding temporary relief and casual teachers) were employed on a permanent full-time basis, 9.9 per cent were employed as permanent part-time staff and 11.4 were on a fixed term contract (either full or part-time).

The proportion of part-time teachers appears to have grown over time, especially in the primary sector. This reflects both an increase in the availability of permanent part-time teaching positions as well as the fact that often primary schools are not able to offer specialist teachers more than a part-time job. The proportion of part-time teachers and the number of hours they work is reflected in the number of teachers, measured in full-time equivalent (FTE) units, being 9.9 per cent less in 1999 than the actual number of teachers.

The number of relief teachers is difficult to estimate, although they are an essential part of the teaching workforce and the labour market's flexibility. Data from a number of sources suggest that in 2000 there were at least 30 000 such teachers in Australia.[1] Much more is known about permanent and fixed term contract teachers. The following discussion relates to these teachers.

Distribution of regular teachers by State, sector and type of school

The distribution of teachers by sector (primary and secondary), State and Territory and whether the school is government or non-government, is shown in Table 1.

The number of teachers in both the primary and secondary sectors is almost equal, with the primary sector exceeding the secondary sector by just over 2 000 teachers (or just under 2 per cent). New South Wales and Victoria are the dominant employers of teachers in both the government and non-government sectors. These two States accounted for 58 per cent of all teachers in 1999, although this proportion has declined over time as the share of States such as Queensland and Western Australia has grown.

[1] See Discussion in Chapter 6.

Table 1: Employment of teachers (FTE) by State/Territory, sector and category of school, 1999

	Primary govt	Primary non-govt	Secondary govt	Secondary non-govt	Total govt	Total non-govt
NSW	25 689	9 073	24 419	12 660	50 108	21 733
VIC	18 060	7 495	17 097	10 708	35 157	18 203
QLD	17 091	4 783	12 073	6 326	29 164	11 109
SA	6 919	2 383	5 033	2 430	11 952	4 813
WA	8 202	2 713	6 664	3 351	14 866	6 064
TAS	2 308	586	2 043	810	4 351	1 396
NT	1 500	270	721	305	2 221	575
ACT	1 267	526	1 398	823	2 665	1 349
Australia	***81 036***	***27 829***	***69 448***	***37 413***	***150 484***	***65 242***

Source: ABS (2000)

Government schools employed 74 per cent of primary school teachers and 65 per cent of secondary school teachers. This proportion varies by State. In Victoria, the government primary sector employs 70 per cent of primary teachers, while in the Northern Territory this proportion is around 84 per cent and in Queensland it is about 78 per cent. A similar difference applies in the secondary sector, with the government proportion ranging between 61 per cent (Victoria) to 72 per cent (Tasmania).

Distribution of teachers by age and sex

Female teachers dominate the primary teaching workforce in every State with 75 per cent or more of the teaching workforce (Table 2). In the secondary sector, the balance between female teachers and male teachers is more even, although female teachers still outnumber male teachers (54 per cent to 46 per cent). However, the female-male ratio in the secondary sector varies across States, with the female proportion being lowest in South Australia (48 per cent) and highest in the ACT (60 per cent). Although part-time teaching represents a small proportion of teachers overall, it is female teachers who form the bulk of part-timers.

The median age of teachers across Australia is estimated at 42 with little variation between States and Territories. A more thorough analysis of the age distribution of teachers in government schools is provided in Chapter 8 and this shows some variation in the proportion of teachers in the older age groups.

Table 2: Sex and age characteristics of the government and non-government teaching workforce, 1999

	Primary % female	Secondary % female	Total % female	Total median age of all teachers (years)
NSW	79.7	54.5	66.7	41.7
VIC	78.5	54.7	66.1	42.8
QLD	76.2	55.2	66.6	40.6
SA	74.9	48.0	62.9	42.2
WA	76.1	51.7	64.4	41.4
TAS	78.3	52.9	65.7	41.8
NT	80.6	57.0	72.0	39.8
ACT	84.5	60.1	71.2	43.7
Australia	***78.0***	***54.1***	***66.1***	***(approx.) 42.0***

Source: ABS (2000) for female proportion; data in Dempster et al (2000) for median age (estimate derived by DETYA). The latter is based on a survey rather than a census of all teachers.

Chapter 2

Trends in the teacher labour market in the 1990s

National trends in students and (regular) teachers

Three important developments in student numbers and student to teacher ratios occurred during the ten year period to 1999:

- the fall in enrolments in primary schools came to a halt at the beginning of the period and by the end of the decade student numbers were back to the levels of the late 1970s;
- enrolments in secondary schools continued to rise but at a slower rate than during the preceding decade; and
- student to teacher ratios in primary schools continued to decline while they remained flat in the secondary sector.

Table 3: Long term trends in numbers of students, teachers and student to teacher ratios

	1979	1989	1999
STUDENTS ('000)			
Primary			
Government	1 517.3	1 302.4	1 378.9
Non-government	367.4	432.1	506.5
Total	*1 884.7*	*1 734.6*	*1 885.4*
Secondary			
Government	819.4	874.4	868.8
Non-government	282.8	402.6	472.5
Total	*1 102.2*	*1 276.9*	*1 341.3*
TEACHERS ('000)			
Primary			
Government	74.8	71.5	81.0
Non-Government	15.9	21.3	27.8
Total	*90.7*	*92.8*	*108.9*
Secondary			
Government	66.4	71.5	69.4
Non-government	18.1	29.8	37.4
Total	*84.5*	*101.3*	*106.9*
STUDENT TO TEACHER RATIOS			
Primary			
Government	20.3	18.2	17.0
Non-government	23.1	20.3	18.2
Total	*20.8*	*18.7*	*17.3*
Secondary			
Government	12.3	12.2	12.5
Non-government	15.6	13.5	12.6
Total	*13.0*	*12.6*	*12.6*

Source: ABS (2000).

As a result of these trends, employment of teachers (in FTE terms) in Australia grew by 11.1 per cent during the decade from 1989. This far exceeded the growth of employment in the economy at large. A large part of this increase in teacher employment was concentrated in the primary school sector, where employment of teachers rose by 17.2 per cent compared to 5.4 per cent for secondary school teachers. This contrasts with the previous ten year period (1979 to 1989), when the growth of teachers overall was much the same, although in that period it occurred predominantly in the secondary school sector.

The difference in growth between the primary and secondary sectors in the 1990s was due to two factors. First, there was a slightly greater increase during that period in the number of students at primary school level than in the secondary sector (8.6 per cent compared to 5.0 per cent). Second, and more significantly, there was a fall in the overall student to teacher ratio in the primary school sector while the student to teacher ratio remained unchanged in the secondary sector.

State and Territory trends in (regular) teachers

National figures mask significant differences in trends between the States and Territories as shown in Chart 1 (a to c) for the primary and Chart 2 (a to c) for the secondary sector (See Attachment 1 for detailed tables of teachers employed). These charts show that, essentially, States and Territories fell into two broad groups: the high teacher employment group represented by NSW, Queensland, Western Australia and the Northern Territory, and the low teacher employment group represented by the remaining States and Territories.

Although all States and Territories increased their primary teacher workforces, each of the States and Territories in the high growth group increased their teacher workforce by over 20 per cent while the States and Territories in the low growth group experienced growths of less than 10 per cent.

In the secondary school sector, the high growth group increased their teaching workforces, but generally by less than in the primary sector, while in the case of the low growth group there was an actual decline in the number of secondary teachers employed. In three of the four States in this group, this followed a fall in secondary school numbers. The largest decline in teacher employment occurred in Victoria (which also had the smallest increase in primary school teachers). By contrast, both Queensland and Western Australia had growths of over 20 per cent in both primary and secondary school teachers.

Chart 1a: Employed primary teachers (FTE), 1984 to 1999

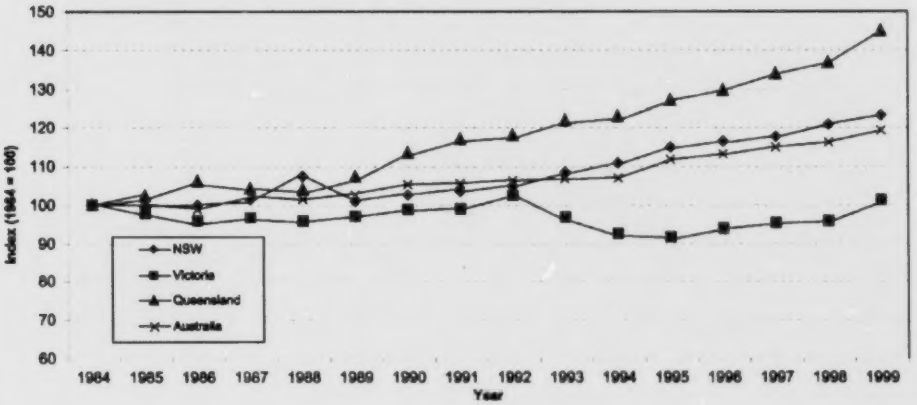


Chart 1b: Employed primary teachers (FTE), 1984 to 1999

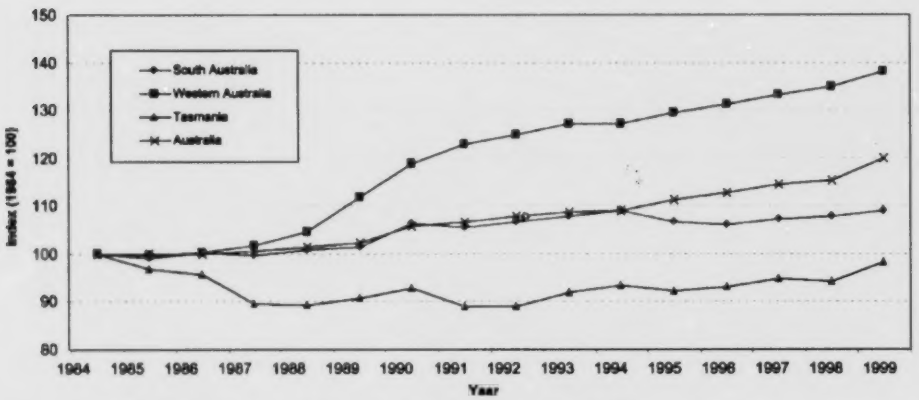
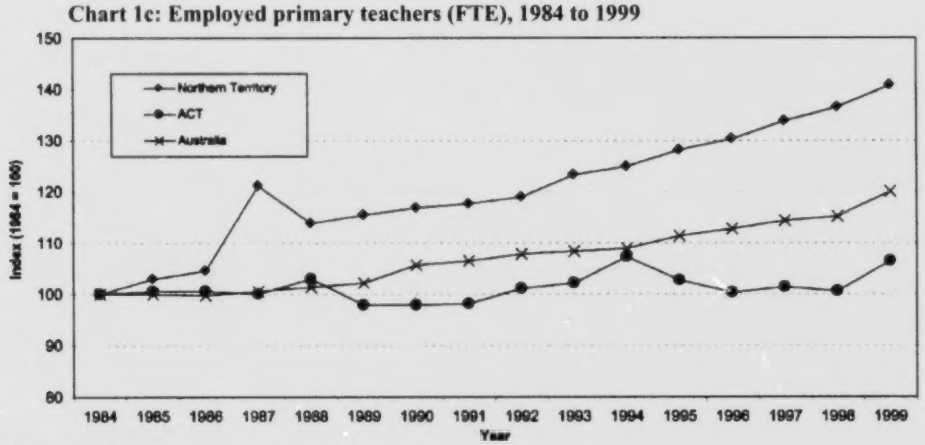


Chart 1c: Employed primary teachers (FTE), 1984 to 1999



Source: ABS (2000).

Chart 2a: Employed secondary teachers (FTE), 1984 to 1999

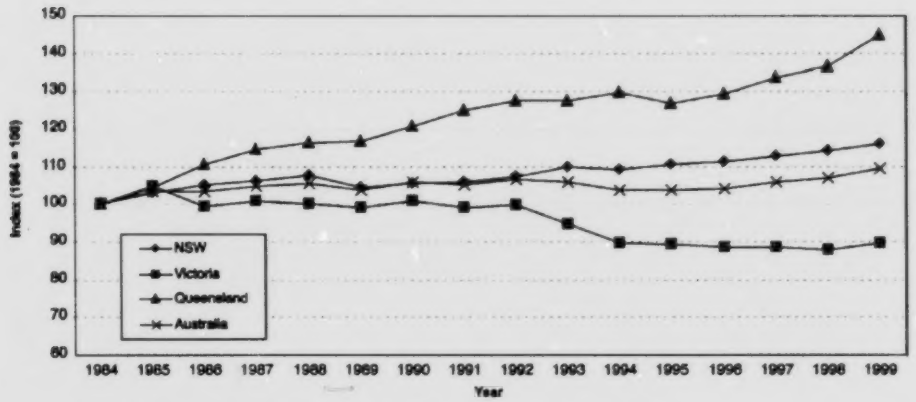


Chart 2b: Employed secondary teachers (FTE), 1984 to 1999

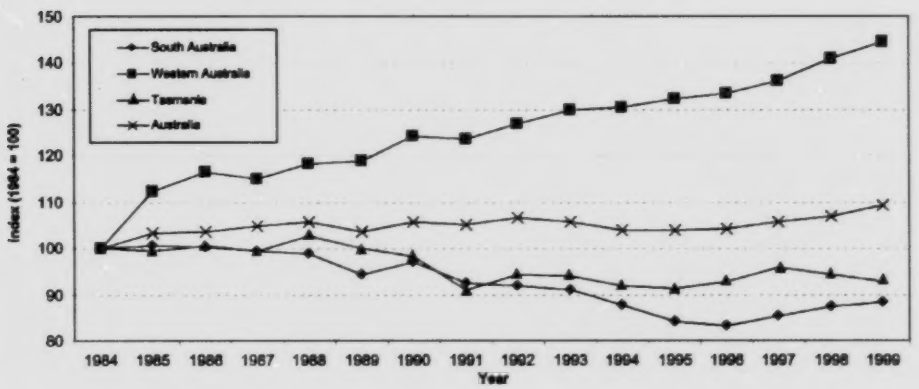
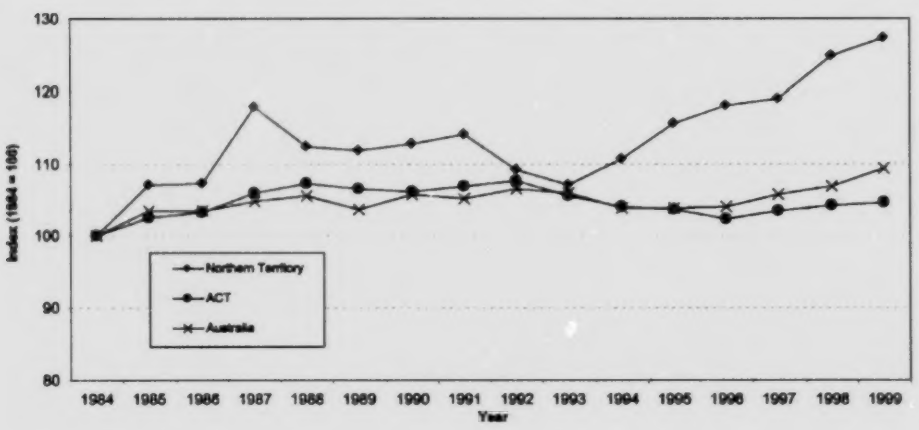


Chart 2c: Employed secondary teachers (FTE), 1984 to 1999



Source: ABS (2000).

Teachers in government and non-government schools

A further significant development during the decade was the continuation of the shift in the proportion of students towards non-government schools in both the primary and secondary sectors. The proportion of students in the non-government sector reached 30 per cent in 1999, up from 28 per cent ten years earlier and just under 22 per cent twenty years earlier. In the secondary sector, non-government schools provided for 35 per cent of all students in 1999, up from 32 per cent ten years earlier and 25 per cent twenty years earlier.

These trends were replicated in the case of teachers. The percentage point change for teachers (3.9 percentage points) over the decade is larger than for students (2.7 percentage points) because teacher student ratios fell by a greater proportion in the non-government sector.

Contract teachers

Results from the DETYA (2000 b) survey of State education authorities suggest that close to 10 per cent of the Government schools core workforce in most State/Territories in 1999 was contracted. This is roughly the proportion of contract teachers identified by the survey conducted by the ACE in 1999 (see Dempster et al 2000) which applied to teachers across the government and non-government sectors.

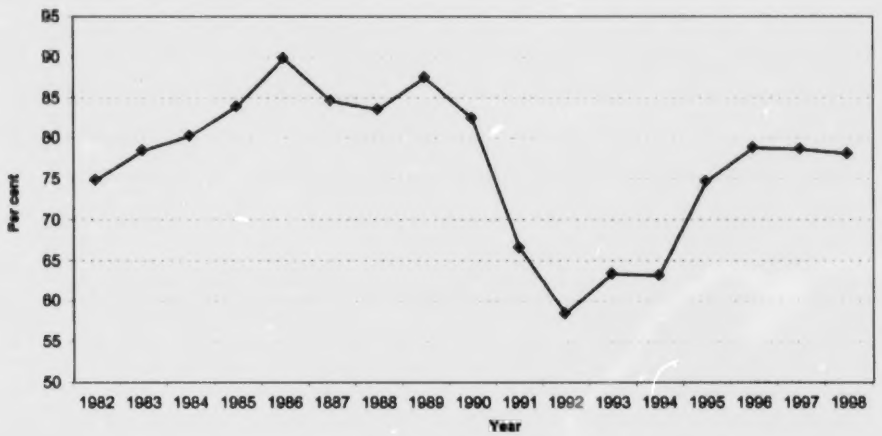
The experience with contract teachers in the 1990s varied across the States. In Western Australia, for example, the proportion of teachers on contract decreased, while it increased in Victoria. These trends appear to have reflected State Government policy and objectives at the time and may accordingly change in the current decade. The education authorities in Victoria, for instance, have indicated that a greater proportion of vacancies are now being offered on a permanent rather than contract basis.

Teacher supply and demand imbalances during the 1990s

In the first half of the 1990s, the requirement for new teachers was reduced by the impact of the recession which affected particularly full-time employment opportunities in the labour market. Bourke (1994) and Preston (2000) noted that, as result, resignations from teaching fell. Together with the slowing in the steady improvement in student-teacher ratios of the previous decade, this led to a decline in the requirement for new teachers. As a consequence, there appeared a substantial surplus of new teacher graduates and others seeking teaching appointments.

This is largely confirmed by data from the Graduate Destination survey reported annually by the Graduate Careers Council of Australia (GCCA). The employment outcomes for the period 1989 to 1998 shown in Chart 3 indicate that slightly less than 60 per cent of all new 1991 teacher graduates available for full-time work had obtained a full-time job by April of the year after graduation. This was down from 88 per cent two years before. The proportion stayed relatively low until the mid 1990s, especially for graduates trained as primary school teachers. In part reflecting these trends, places in university initial teacher education courses fell although Burke (1994) notes that university course restructuring at about this time also had an impact on initial teacher training course places on offer.

Chart 3: Teacher graduates working in full-time employment as a proportion of those available for full-time employment



Source: GCCA (1999).
Note: full-time employment refers to any type of full-time employment not just in teaching.

In the second half of the 1990s, as the economy improved, the factors which had led to low demand for new teachers began to unwind and the demand for new teachers increased. The employment outcomes for new teachers began to improve (Chart 3) but never reached the levels experienced in the 1980s. In part this reflected the competition for places from the stock of teachers without a teaching appointment built up in the early to mid 1990s. All indicators point to the fact that in the late 1990s the supply of new teachers (essentially new graduates and previous graduates in the surplus pool) was adequate to meet the rising demand.

Recently published research provides a basis for comparing in broad terms the requirements for new teachers and the number of new graduates during the 1990s. Shah (1999) estimated that in the period 1986-87 to 1997-98 the net replacement rate for teachers was around 2.9 per cent a year. This estimate in effect measures the net loss from the teaching profession.

Using the overall teacher workforce data of Attachment 1 the replacement estimate by Shah corresponds to a net loss of approximately 6500 teachers (or 5900 full-time-equivalent teachers) a year during the ten year period to 1999. During the same period the average yearly growth in teacher numbers was 1900. The requirement for new teachers over that period, estimated as the sum of net loss of teachers and growth in employment of teachers, would therefore have been around 8400 a year. By contrast, the average number of graduates from initial education courses during the period 1989 to 1998 was 10 700 (refer Attachment 6) or just over 9000 a year (assuming that only 85 per cent enter the market). This is consistent with the reported build up of a surplus of teachers in the 1990s.

Although on a national basis teachers in the 1990s were broadly in surplus, the situation differed across States and Territories. As a generalisation, States which experienced lower than average teacher growth rates (South Australia, Victoria, Tasmania and the Australian Capital Territory) continued to have a substantial surpluses of teachers throughout the 1990s. By contrast, in those States where employment of teachers grew faster than average (New South Wales, Queensland, Western Australia and the Northern Territory), the stronger demand for teachers led to some tightening of the labour market for teachers in the second half of the 1990s.

PART B

THE TEACHER LABOUR MARKET IN 2000

Chapter 3

The state of the teacher labour market in Australia in 2000

This chapter discusses the current state of the teacher labour market at the national level and by State and Territory. The last section of the chapter provides information on recruitment measures taken by the State and Territory education authorities to deal with difficult-to-fill vacancies.

Overall assessment of the teacher labour market

Table 4 indicates that the current state of the teacher labour market in Australia is one of overall balance. The primary sector in all States and Territories borders on the over-supply of teachers while the secondary sector is closer to balance.

Table 4: Balance between demand and supply in the teacher labour market by State

	Primary	Secondary
NSW	B/OS	B
VIC	B/OS	B
QLD	B/OS	B
SA	B/OS	OS
WA	B/OS	B
TAS	B/OS	B/OS
NT	B/OS	B
ACT	B/OS	B/OS
Australia	*B/OS*	*B*

B= Balance OS=Oversupply S=Shortage
Source: DEWSRB State Labour Economics Offices and State education authorities (cf DETYA b)

In the primary sector, education authorities report an adequate supply of teachers except for a small number of positions in some geographic locations. Victoria, Queensland and the Northern Territory reported some recruitment difficulty with respect to teachers in Languages Other Than English, particularly in rural schools. In the Northern Territory, special education teachers were also hard to find.

In the secondary sector, despite overall balance, most States and Territories report difficulties in filling two types of vacancies: those located in rural and remote areas (and in some locations within metropolitan areas as well) and for certain specialisations. These two problem areas have, however, been longstanding in the teacher labour market.

Table 5 provides more detailed information on subject areas in which teacher vacancies have proved difficult to fill. The main points to note are:

- mathematics, science, information technology or, more generally, business studies teaching vacancies have been hard to fill in all States and Territories, with the greatest recruitment difficulty being experienced in the case of mathematics teachers;
- other subjects with difficult to fill vacancies in most but not all States and Territories are Languages Other Than English (LOTE) and industrial arts/technology.

However, the States and Territories indicate that, while there has been difficulty in filling these vacancies, they have been able to address this difficulty by taking a variety of steps. In addition, they have in place measures designed to improve the supply of specialist teachers (as discussed later in this chapter).

Table 5: Subject area recruitment difficulties/shortages in secondary schools

Broad subject areas	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
Health and Physical Education								
Language Other Than English		RD	RD	RD			RD	
Mathematics	RD	RD	RD	RD	RD	RD	RD	RD
English					RD		RD	
Science	RD	RD	RD	RD	RD	RD	RD	RD
Studies of Society and the Environment					RD			
Visual and performing arts					RD			
Technical/Industrial arts/ Home Economics /Technology	RD	RD		RD	RD	RD	RD	RD
Vocational Education and Training								RD
Special education		RD	RD	RD		RD		RD
Information Technology	RD	RD		RD	RD	RD	RD	RD
Other		RD (Music)				RD (Music)	RD (Economics, ESL)	RD (School counselling)

RD = Recruitment difficulty S = Shortage
Source: DEWSRB State Labour Economics Offices and State Education Authorities (DETYA 2000 b).

Summaries of the labour market for teachers in each State/Territory

A summary of the current labour market situation in each State is provided below and a more detailed commentary on each State or Territory trends is at Attachment 1. Each of the State summaries that follow was initially prepared from assessments provided by the State Labour Economics Offices of DEWRSB in 1999 and updated by the State and Territory authorities.

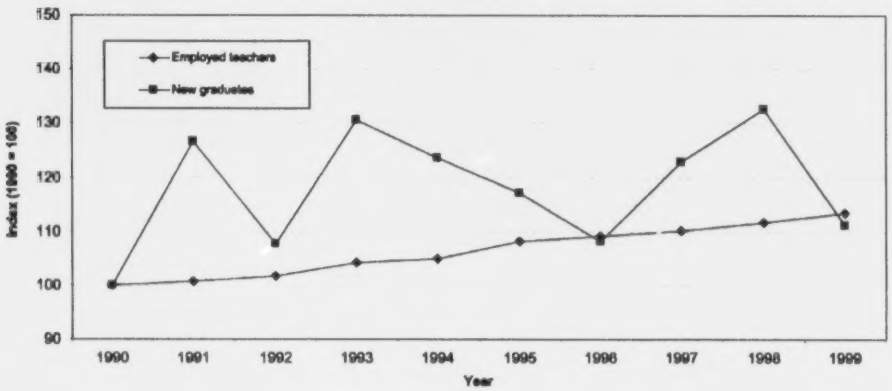
The charts that accompany the individual State and Territory assessments show trends in teacher employment and in initial teacher training course completions (or graduates). These are key indicators of developments in the teacher labour market and have the added advantage of being available on a consistent basis across States and Territories. The year 1990 has been used as the starting point, so providing a full ten year time span for the data.

New South Wales

New South Wales has been experiencing rising teacher employment levels as well as graduations from initial teacher training courses (Chart 4). The labour market for experienced secondary teachers is in approximate balance. Although some shortages are apparent in certain subjects, the number of vacancies is small. Some shortages have been experienced in technological and applied studies (which includes computing) and mathematics/science. Positions in some subjects have been difficult to fill in rural areas and in some difficult-to-staff metropolitan locations. Oversupply still exists for recent graduates in some subject areas, especially creative and performing arts, personal development, health, and physical education.

The Catholic Education Commission and regional Catholic Education Offices also reported shortages in science, mathematics, technological and applied studies and computing, which is sometimes taught in technological and applied studies or as part of other subjects.

Chart 4: Employed Teachers and new graduates, 1990 to 1999, New South Wales



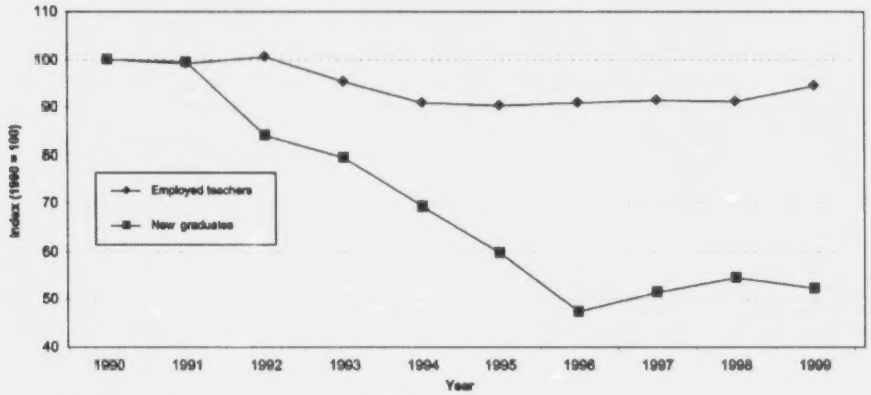
Source: DETYA (2000, a) and ABS (2000)

Victoria

Teacher numbers and graduations in Victoria are on the rise (Chart 5) following reductions in numbers of teacher employed and teacher training completions in the middle of the 1990s. Currently the labour market for secondary school teachers in Victoria is in balance although shortages are reported in LOTE (especially Indonesian, Japanese, German and French), technology (especially information technology) and in some geographical locations.

To a lesser extent mathematics and science teaching positions have been difficult to fill. Technology teachers (woodwork, metalwork, automotive etc.) are in shortage across the State due to an ageing workforce and lack of new entrants.

Chart 5: Employed Teachers and new graduates, 1990 to 1999, Victoria



Source: DETYA (2000,a). and ABS (2000)

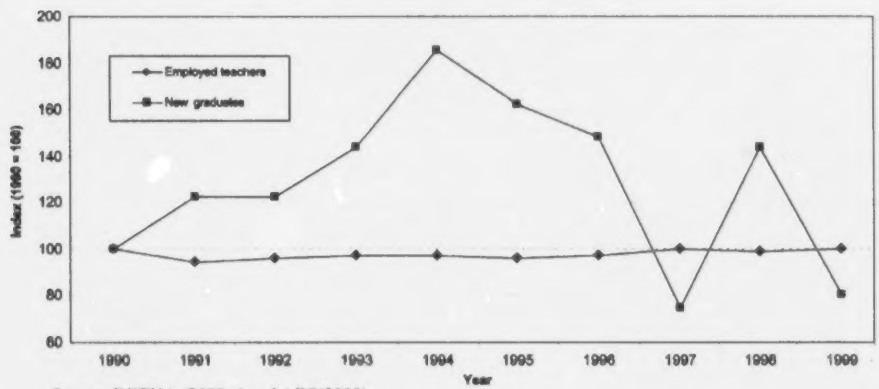
Queensland

Strong employment growth in Queensland continues with teacher training completions having picked up since the decline of the mid 1990s (Chart 6).

Recruitment difficulties for secondary school teachers continue in Government schools for a number of subject areas and are most acute for teachers of mathematics, science, industrial design and technology (manual arts), home economics, some Languages Other Than English (Japanese, Chinese, Indonesian, German and, in some schools, French and Italian).

The DEWRSB Labour Economics Office in Queensland informs that the Catholic Education sector reports no shortages of teachers to Year 10 but suggests that there is strong demand , in particular, for experienced senior teachers in mathematics, physics and information technology.

Chart 6: Employed Teachers and new graduates, 1990 to 1999, Queensland



Source: DETYA (2000,a) and ABS(2000).

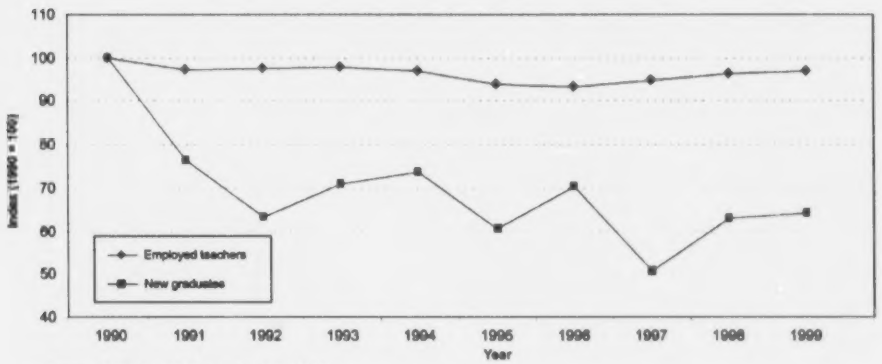
South Australia

Employment levels in South Australia have been static reflecting the trend in student numbers and there has been a significant winding down of overall teacher training completions in the 1990s (Chart

7). While in aggregate the supply of secondary school teachers exceeds demand, the Department of Education, Training and Employment and, to a lesser extent, the non-government schools are experiencing difficulties in filling some vacancies.

Recruitment difficulties are usually due to location or conditions of employment i.e. non-metropolitan area and contract or part-time positions respectively, but there are also problems with some subject areas including English, mathematics, specific science subjects (chemistry, biology etc.), computing & information technology, commerce subjects (economics, accounting and legal), humanities subjects (art, music, drama), physical education and religious education.

Chart 7: Employed Teachers and new graduates, 1990 to 1999, South Australia



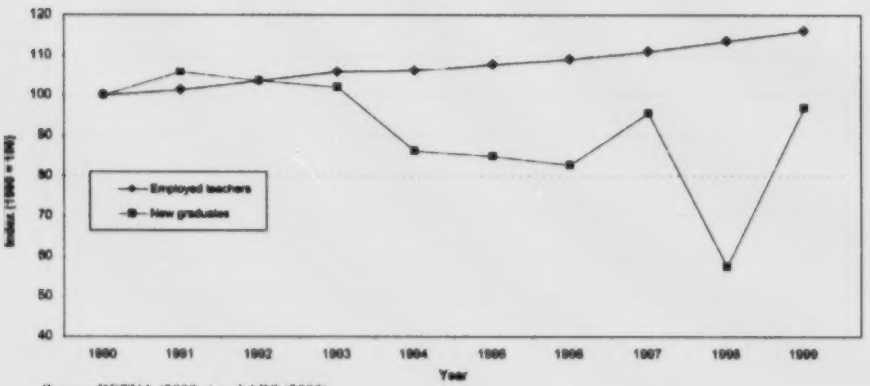
Source: DETYA (2000,a) and ABS (2000)

Western Australia

Employment has continued to expand in Western Australia and overall teacher training completions have been fairly much sustained (Chart 8). Whilst the overall labour market for secondary school teachers in Western Australia is one of balance, there are some difficulties in filling positions for mathematics, science (physics and chemistry), technology and enterprise, and home economics, largely in country areas.

The Western Australian Education Department considered positions in the Goldfields and the Pilbara have been the most difficult to fill during 1999. Generally the further schools are from Perth and other larger population centres, the greater the likelihood of recruitment difficulties.

Chart 8: Employed Teachers and new graduates, 1990 to 1999, Western Australia



Source: DETYA (2000,a) and ABS (2000)

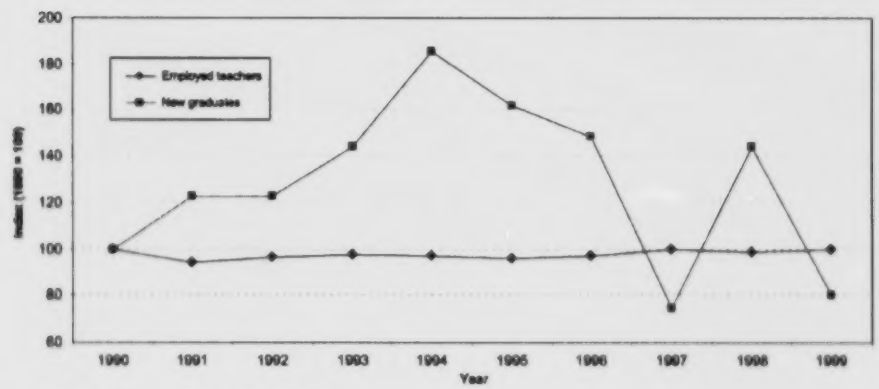
Tasmania

The flat employment situation for teachers has been mirrored by a fluctuating but sustained level of teacher training completions (Chart 9).

There appear to be few major problems in recruiting secondary teachers for most subject areas at present. The private sector in particular attracts adequate numbers of suitable applicants for advertised positions. There are some reports of minor difficulties in the mathematics/science and information technology areas, but this is largely manifested by the vacancies taking longer to fill, rather than not being filled at all.

There have been some regional recruitment difficulties reported primarily in the government sector and mainly on the north-west and west coasts of Tasmania.

Chart 9: Employed Teachers and new graduates, 1990 to 1999, Tasmania



Source: DETYA (2000,a) and ABS (2000)

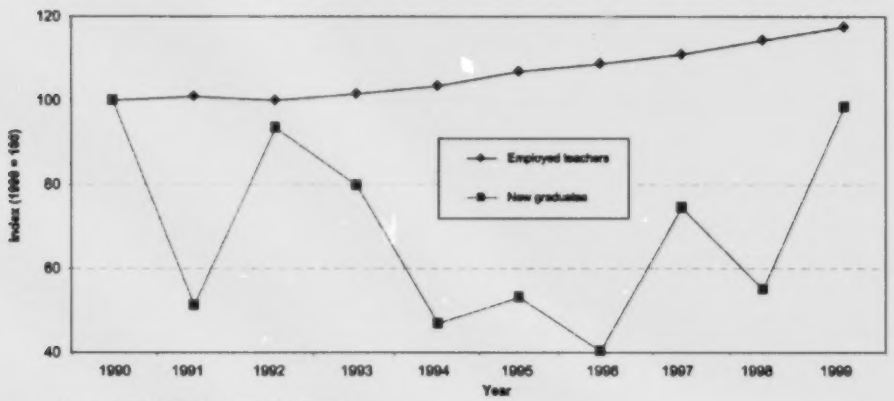
Northern Territory

In the 1990s teacher numbers in the Northern Territory have continued to grow. Training levels appear to have been on a strong upward trend since the mid 1990s, although from a relatively low base (Chart 10).

The current labour market for secondary school teachers is one of decreasing recruitment difficulties, as additional staffing needs have eased following recent reviews of staffing requirements. However, some difficulties are being experienced, particularly for subjects such as economics, information technology, mathematics and English. Difficulties are more apparent in regional areas outside Darwin. Teachers of ESL, in the context of teaching in Aboriginal communities, are very difficult to recruit.

The DEWRSB Labour Economics Office in the Northern Territory reported that the Catholic Education sector notes that relief teachers are also in short supply.

Chart 10: Teachers employed and new graduates 1990 to 1999, Northern Territory



Source: DETYA (2000, a) and ABS (2000)

Australian Capital Territory

Teachers have fluctuated in the Australian Capital Territory around a fairly static employment level. Completions of teacher training have also maintained a broadly steady trend level over the 1990s (Chart 11).

Whilst the overall labour market for both primary and secondary school teachers in the ACT is in balance, there are minor recruitment difficulties in mathematics, science, information technology, home economics, special education, teacher librarian, vocational certification and school counselling. The demand in these areas is likely to increase as the separation rate continues to increase over the coming years. There is also supply concerns with teachers registered for casual work.

Chart 11: Employed Teachers and new graduates, 1990 to 1999, Australian Capital Territory

Source: DETYA (2000,a) and ABS (2000)

State and Territory recruitment strategies for dealing with hard-to-fill teacher vacancies

All States and Territories have a number of strategies and initiatives in place to promote teaching as a career and to assist teacher recruitment. The data provided in the DETYA 2000 survey suggests that the initiatives can be summarised under four categories. Some of these strategies are summarised below with further detail presented in Attachment 1.

Promotion of teaching as a career

States and Territories have developed websites to promote teaching as a career and some of these are listed in this report at Attachment 1. Some States and Territories have additional initiatives in place.

In 1999, on behalf of MCEETYA, Education Queensland developed a video to promote teaching as a career. The video is used in schools, universities and career information fairs. Representatives of the Northern Territory Department of Education participate in 'Recruitment Fairs' organised by interstate Universities with the view of attracting new graduates. The developing website also assists persons interested in teaching in the Territory.

Financial incentives

The financial incentives offered by the States across Australia vary and are targeted to areas of need. Some examples include:

- In Queensland, teaching scholarships are offered to Aboriginal and Torres Strait Islander people to develop a workforce that is more reflective of Queensland's communities, and to Year 12 students from rural and remote areas who have chosen primary teaching as a career;
- In the Northern Territory, employees wishing to undertake further studies are able to get reimbursement of their HECS liabilities;
- In Western Australia internships were offered to students in their final year of training who had successfully completed their teaching practices and most of their academic requirements;

- In Victoria the Education Department offers up to 220 teaching scholarships in each of three years to attract the brightest and best young graduates. The scholarships program could not only increase the number of high quality graduates seeking employment as teachers, but could be used for targeting employment to geographic locations where there are recruitment difficulties or subject areas where there is increased teacher demand.

In addition, some States offer financial incentives to attract teachers to country locations.

Initiatives for increasing the number of teachers in particular subject areas

At the national level, the three year national DETYA funded Quality Teacher Program commenced in 2000 to update and improve teachers' skills and understanding in the teaching of literacy, numeracy, science, mathematics, information technology and vocational education.
The State and Territory authorities have additional strategies and initiatives are being taken to meet teacher shortages in particular subject areas.

In New South Wales, for example, the Department of Education and Training undertakes ongoing liaison with universities in both metropolitan and rural locations to expand current and establish new pre-service teacher education programs in areas of workforce need, including technological and applied studies, mathematics and science. In Queensland, students completing their pre-service studies who have the capacity to teach mathematics and some senior science subjects are offered permanent positions if they are prepared to serve anywhere in the State. To increase the number of specialist teachers of vocational education and training (VET) subjects, students studying for an education degree who have appropriate industry qualifications and experience can be given temporary authorisations to teach.

South Australia provides retraining opportunities in areas of teacher shortage. Further, a Ministerial Committee for the Teaching and Learning of Mathematics has been established to focus on teacher shortages in this area and to identify strategies to redress this situation. The LOTE Plan 1998–2007 provides for increased funding to expand the Languages Retraining Program to increase the numbers of appropriately qualified teachers of languages.

In Tasmania, alternative methods of curriculum delivery such as telematics has been tried while in Northern Territory teacher sharing between two schools, particularly in the LOTE area, is being practised.

Measures for attracting teachers to remote and rural areas.

Recruitment difficulties are most severe in rural and remote areas. This is even true in the case of States and Territories where distances of rural schools from the metropolitan and urban centres are shorter (e.g. Tasmania and Victoria) although recruitment difficulties are more pronounced in States like Western Australia and Queensland, which are very dispersed geographically.

In New South Wales, a range of strategies are used to recruit high quality teachers to isolated areas of the State and other areas of need, including the Graduate Recruitment Program, the Permanent Employment Program, incentive transfers for teachers, and arrangements to fast track employment for casual teachers. In South Australia, specific units on 'country teaching' have been incorporated within established university courses. Increased opportunities for employment in country schools have been created through the introduction of 'School Choice' vacancies, whereby schools declare and select for vacancies.

In Western Australia, most vacancies are in rural or remote locations. The Remote Teaching Service has been successful in recruiting new graduates and experienced teachers into these locations. In 1998 a country incentives package was introduced to assist teachers prepared to teach in these locations.

Chapter 4

The state of the teacher labour market in selected overseas countries

In order to place the Australian teacher labour market in a broader context, this chapter provides a short review of the state of the teacher labour market in four English speaking countries – the UK, the USA, New Zealand and Canada – whose teacher labour market arrangements are similar to those in Australia. Information from other countries, while useful, are more difficult to obtain.

United Kingdom

In the UK the annual school-based Survey of Teacher Vacancies provides information on vacancies by type of school, region and subject area. The survey results are published by the Department for Employment and Education (DfEE).

An important measure derived from this survey is the "vacancy rate" which is the ratio of vacancies to the number of permanent full-time teachers employed. The survey results do not refer to shortages as such but recruitment difficulties can be expected to be greater when the vacancy rate is high.

Between 1995 and 2000 the overall vacancy rate more than doubled from 0.3 per cent to 0.7 per cent. It rose for all subject areas, with the highest vacancy rates being in four subject areas: mathematics, computer studies, languages other than French and German, and craft, design and technology. These subject areas are also those where recruitment fell short of the target by the greatest margin.

Vacancy rates were also higher in some geographical areas than others. London and the South East areas have consistently experienced high vacancy rates over time.

The study of the UK teacher labour market by Straker (1991), while somewhat dated, noted that in subject areas of recruitment difficulty such as mathematics, physics and craft, design and technology, many teachers did not have specialist qualifications in their subject area. He used the term "hidden shortage" to describe this situation. Currently some subject areas in the UK could fall in this category.

The UK Government has taken a number of steps to address these recruitment difficulties and the details are available on the DfEE website at www.dfee.gov.uk. These initiatives include:

- The Teacher Training Agency, established in 1994, which promotes teaching as a profession and sets out to raise the standard of teaching and the quality of teacher training courses;
- Financial incentives to encourage the take-up of teacher training especially in areas of high demand. These incentives include the waiving of tuition fees for postgraduate certificate of education courses; and the provision of an incentive payment (of 5000 pounds) for those who take up teaching in mathematics and science;
- Encouragement of mature individuals to enter teacher training by offering them employment as "unqualified teachers" while they are training by way of an individualised training programme. The school receives an incentive payment of 2000 pounds to cover the costs of the training; and
- Refresher courses for returners to teaching, including help with childcare, and a welcome back bonus for qualified teachers who have been out of teaching for more than a year and return to the profession.

While immigration is not cited as a measure adopted by the UK Government for increasing its supply of teachers, reports have appeared in the Australian media about recruitment agencies hiring teachers in Australia for UK schools. The extent of this is difficult to gauge.

The recruitment difficulties in the London region have led to the Government instituting a special recruitment strategy for that area. This is described at www.teachers4london.com.

United States of America

The most authoritative information on teacher demand supply comes from the Schools and Staffing Survey (SASS) conducted on behalf of the National Centre for Education Statistics (NCES). The survey covers public and private schools and has components providing information about teacher demand and shortages, the view of schools principals and of teachers, and data on the school and school district. The information is published by the NCES on their web site http://nces.ed.gov.

Analysis of these data has not produced a general consensus in the USA about the extent of teacher recruitment difficulty. However, the most comprehensive and widely quoted study on this issue *What Matters Most: Teaching for America's Future* published by the National Commission on Teaching and America's Future (NCT&AF) in 1996, stated that recurring shortages of teachers have characterised the US labour market for most of the 20th century. According to that report, shortages as measured by the vacancy rate and more qualitative measures of recruitment difficulty, were most pronounced in 1996 in bilingual education, special education, physics, chemistry, mathematics and computer science. Black American teachers were also particularly highly sought after. Shortages were most severe in the poorest districts.

Individual States in the USA have the responsibility for addressing teacher demand and supply but information on the State measures taken are difficult to assemble. The federal government also assists schools in "approved teacher shortage areas" to meet their recruitment needs but its efforts are mainly directed at improving the overall quality of teachers. This emphasis seems to reflect the finding from the NCT&AF that upward of 27 per cent of all new teachers lacked a "proper licence" in their teaching field. In 1997 the federal government provided $350m to recruit new teachers in the neediest areas, especially in rural and poor urban neighbourhoods.

New Zealand

New Zealand has a rich data source on teachers and teacher movements, including in and out of teaching and between schools. This is derived from their annual surveys of schools conducted by the Ministry of Education.

During the 1990s New Zealand experienced teacher shortages in primary schools due to the sharp rise in student enrolments associated with a "demographic bulge" centred around the early years of schooling. This group of young people are now of secondary school age and some teacher shortages in the secondary sector are expected in the early years of the current decade.

Currently teachers in the primary sector are in over supply. In the secondary sector, teachers of mathematics, science, technology, information and communications technology are in great demand and so are teachers from Tereo, Maori and Pacific Islander backgrounds.

New Zealand has been active in assisting the growth in the supply of teachers which as a result increased markedly in the 1990s. Some of the key measures have included:

A nationwide program of TV advertising to boost the profile of teaching;

A $10 000 scholarship paid to those commencing a teacher training course in subjects in high demand;

Funding schools to build up a pool of relief teachers;

Retraining of teachers who have been out of teaching for some years, with preference given to those qualified in "shortage" specialisations;

A national relocation grant for teachers moving into priority teaching positions and a recruitment bonus to schools which take on these teachers. Teachers coming to New Zealand also qualify for an international relocation grant; and

A grant for persons returning to a full-time position after an absence of 3 years or more;

Further details are available on the website www.teachnz.govt.nz.

Canada

There is not the same depth of coverage and quality of information on teacher shortages in Canada as in the other three countries discussed above. There also appears to be a lack of official sources of information at the national level.

The most recent analysis of the teacher labour market was commissioned by the Canadian Teachers' Federation in 2000. In its report the Federation claimed that schools in Canada face acute teacher shortages, especially in science, chemistry, biology and physics. Speech therapists were also ranked as in short supply. Retaining teachers was perceived as a problem and schools in Newfoundland and the North West Territory all expected that recruitment difficulties would continue into the following year.

While now somewhat dated, a contrary view of the severity of teacher shortages in Canada was presented by Press (1997). His study of schools reveals that of the 136 school districts which responded to the survey, 98.5 per cent reported no teacher shortage and 92.4 per cent reported that they did not expect to have a teacher shortage in the next five years. Press concluded that in Canada there was a surplus of teachers which would continue for a few years.

Summary of teacher supply and demand in overseas countries

While the available evidence from the four English speaking countries is not of a consistent quality and currency, it appears that some teacher recruitment difficulties are being faced by all of them. These difficulties are mostly in areas such as mathematics, some sciences and languages, information technology and crafts and design. Rural areas and remote regions face greater difficulties and generally for a wider range of teachers. In North America and New Zealand teachers from minority backgrounds are also in short supply. The UK and New Zealand governments appear to be the most active in terms of initiatives to increase supply.

PART C
FUTURE OUTLOOK

This part of the report examines the outlook for the demand and supply of teachers in Australia over the period to 2003. This is the last year for which estimates of graduations can be based on actual commencements. The first two chapters of this part, Chapters 5 and 6, discuss the factors that need to be taken into account in estimating demand and supply of teachers respectively. Chapter 7 uses the framework developed in the previous two chapters to calculate estimates of demand and supply up to 2003.

No estimates are provided for the period post 2003. However, Chapter 8 explores a number of issues which are likely to have a significant impact on teacher supply and demand at least in the period immediately after 2003 and going towards 2010.

A schema of stocks and flows in the teacher labour market

As an aid to the discussion in chapters 5 and 6, Figure 1 provides a diagrammatic representation of stocks and flows in the teacher labour market. The key stocks and flows are:

Key stocks:

numbers of classroom teachers (or employed teachers);

those who are relief and casual teachers or awaiting placement; and

people qualified as teachers but not working as such.

Key in-flows:

graduates;

teachers returning from leave;

teachers (other than those returning from leave) who are returning into teaching; and

inward migration.

Key out-flows:

retirements;

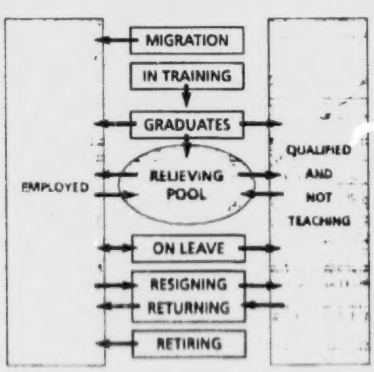
resignations and other exits (e.g. dismissals and deaths);

teachers going on extended leave; and

outward migration.

These stocks and flows are discussed in detail in Chapters 5 and 6.

Figure 1: Teacher labour markets—main stocks and flows.



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Chapter 5

Factors affecting the demand for teachers

Most of the annual requirement for teachers is met by teachers returning to the classroom who were employed in schools in the previous year. Each year, however, new teachers have to be found because some teachers leave and also because the requirement for teachers changes up or down due to a number of factors. Changes in requirements, generally upwards because of population increases, is referred to as 'growth demand' for teachers. Teachers leaving and needing to be replaced generates the replacement demand for teachers. These two together make up the demand for new teachers.

Growth demand for teachers

During the 1990s growth in the teaching workforce was of the order of 1.1 per cent a year. This was only slightly higher than during the previous decade (1.0 per cent a year).

The total number of teachers required and whether or not additional teachers are required depends on a number of factors. These include: the size of the school age population; participation rates at various ages and especially the retention rate to Year 12; the level of government and private funding of schools, and teacher and ancillary costs; and policies regarding class sizes and curricula (which can affect class sizes). These factors can be encapsulated in two variables which together determine the number of teachers:

1. enrolment levels; and
2. student to teacher ratios (STRs).

Between 1989 and 1999, enrolments grew and STRs generally declined. This combination led to a relatively strong growth in teacher employment, with the two factors reinforcing each other. The enrolment growth effect was stronger, with two-thirds of the teacher employment growth being due to the growth in enrolments and one-third to the decline in the STRs (DETYA estimates).

Enrolment trends

Detailed enrolments changes in the last five years (1995 to 1999) are shown in Attachment 2. During this time, enrolments increased by 3.7 per cent, with secondary enrolments growing more strongly (5.1 per cent) than primary enrolments (2.8 per cent). Senior secondary school student enrolments grew faster (8.3 per cent) than junior secondary student enrolments (3.8 per cent). The strongest growth was experienced by secondary student enrolments in the non-government sector.

Student to teacher ratios

Education authorities do not normally use STRs as targets to be achieved. Rather, the STRs are the outcome of decisions made by the education authorities and governments about curricula, learning outcomes and the allocation of resources. However, the STR is useful for projection purposes because it captures all of these factors in a single indicator.

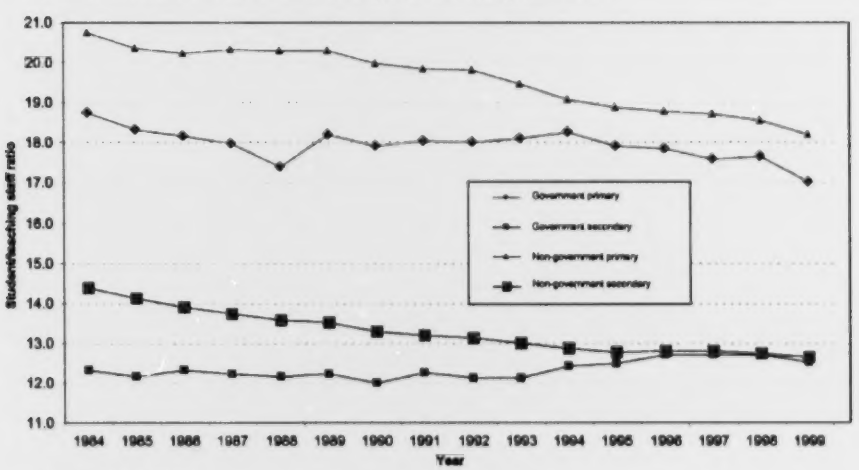
Table 6: Student to teacher ratios by sector and category of school, 1999

	Primary		Secondary	
	Government	Non-government	Government	Non-government
NSW	17.7	18.6	12.6	12.5
VIC	17.1	18.3	12.6	12.4
QLD	16.0	17.8	12.6	13.2
SA	16.9	18.0	11.9	12.7
WA	17.6	17.2	12.4	12.7
TAS	15.7	17.9	13.0	12.8
NT	13.8	18.5	10.9	10.8
ACT	17.1	20.2	12.3	13.4
Australia	***17.0***	***18.2***	***12.5***	***12.6***

Source: ABS (2000)
Note: Student to teacher ratios are derived by using FTE for students and teachers.

In this context, it is instructive to compare STRs by State and Territory, sector (primary/secondary) and category of school (government/non-government) as shown in Table 6. There is a significant difference in STRs between the States in the government and non-government sectors. In all States and Territories (except Western Australia), STRs are higher in non-government schools in the primary sector. The difference between government and non-government schools in the secondary sector, where they exist, are much smaller.

Chart 12: Student to teacher ratio, 1984 to 1999, Australia



Source: ABS (2000).

In the last 15 years, STRs in both sectors and category of school have, with one exception, progressively fallen at the national level (Chart 12) although the trends across sectors and type of school have been different. For instance:

3. the primary school STR, in both the government and non-government sectors, has declined continuously so that the level in 1999 was nearly two percentage points lower than in 1984;

4. the secondary school STR for government and non-government schools declined to 1994 but the government secondary STR then rose for a few years before falling again in 1999. As a result in 1999 the government secondary STR was higher than at the beginning of the decade; and
5. the non-government school STRs have declined at a faster rate than the government STR.

The fall in the STRs over time has had the effect of increasing the demand for teachers above what they would be with steady STRs. For example, if STRs were the same in 1999 as they were ten years earlier, there would be a need for eight per cent fewer teachers in the primary sector.

Replacement demand for teachers

Replacement demand arises because of losses to the teaching service or teaching jurisdiction from retirements, resignations and absences due to leave. The sum of these components is referred to technically as total separations.

Assessment of annual replacement demand relative to growth demand shows that replacement demand has generally been the major source of demand for teachers. In the government sector, (gross) annual separations have been in the range of 3-5 per cent of the teaching workforce per year, and in some years higher. By contrast, growth demand has tended to average slightly more than 1 per cent a year. A separation rate of 3-5 per cent of the current teaching workforce (of 215 000) represents the need to replace between 6450 and 10 750 teachers a year.

Separation rates vary by State, sector and type of school; by the demographic composition of the teaching workforce; and by conditions in the teaching workforce relative to the wider economy. These are discussed further below.

Teachers separating from teaching

There has been some confusion in the literature on what does and does not constitute separation from teaching. This has sometimes led to misleading assessments of the replacement demand for teachers. The two major sources of confusion are, first, which components of separation should be included and, second, whether total separations measured are 'gross' or 'net' (i.e. include returning teachers or not).

In preparing this report States and Territories were asked to provide information on every year between 1995 and 1999 on the following categories of (gross) separation:

6. Age retirement.
7. Resignations which includes:
   - leaving teaching;
   - leaving to take up a position in another teaching jurisdiction or overseas;
   - leaving but intends to continue as a relief, casual or emergency teacher;
   - leaving the workforce to travel, look after children, etc;
   - leaving for personal reasons;
   - taking a Voluntary separation package;
   - leaving for other reasons.
8. Redundancy.
9. Contract expired (and not renewed).
10. Going on extended leave of at least one term duration.
11. Other.

The data provided by the education authorities form the basis for estimating the extent of separations and the relative importance of the various categories.

Categories of separation and their importance

Redundancy has played a small part in teacher separations in recent years and then only in some States.

Contract teachers are a significant part of the teaching workforce in some States, like Victoria and Western Australia, where contract teaching has been an established institutional arrangement especially for new teachers. In these instances, contract teachers were used both to fill in for teachers going on leave and to occupy an on-going position. In most States, however, only teachers going on leave are backfilled from the casual teaching labour force. These casual teachers may be employed on contract for the period of the break or, most often, as a casual for the entire period. For these reasons, contract teacher separations can be quite numerous.[1]

Resignations can occur for a number of reasons and not all are associated with moves out of teaching. Some resignations actually involve teachers moving from one education system to another or from one State to another, as discussed in more detail in Chapter 5.

Research indicates that resignations out of teaching are affected significantly by the state of the economy and the characteristics of the teaching labour force. During the recession of the early 1990s resignations fell and this was ascribed largely to the reduced opportunities for other employment in the labour market (Burke 1994). When this happens, other teachers, who may have wished to take some time off teaching with the intention of re-entering at a later date, may be deterred from doing so, knowing that in the future opportunities for re-entering may be curtailed if fewer teachers resign. As a corollary, resignation rates tend to rise when the general labour market conditions, such as low unemployment rates, favour job seekers.

There are also indications that resignations are more common for younger male teachers in the early part of their careers, say to the age of 35 years or so. After this age teachers have reached a reasonable level of seniority in the school system and may find it more difficult to secure jobs with similar pay and conditions outside teaching. In addition, teachers may not wish to relinquish superannuation benefits they have accrued. It has been suggested that the older age distribution of the teaching workforce has reduced separation levels, which may provide an explanation for the fairly low current levels of separation noted in this report.

Age retirement depends on the age distribution of teachers, their retirement intentions and superannuation arrangements. Table 7 provides data on retirement, resignations and other forms of separations (other than leave of absence) for permanent teachers in government schools. These data show that:

12. retirements have not have been as important a reason for separations among the teaching profession as resignations. As discussed in greater detail in Chapter 8, this relationship could change in the future because of the rapid ageing of the teaching workforce: and
13. while retirement rates are not too different in the primary and secondary government sectors, the resignation rates have been higher in the secondary sector. This is the major reason for the higher separation rates in the secondary compared to the primary government sector.

[1] In Victoria the standard mode of employment for teachers now is ongoing except where the position is genuinely of a fixed-term nature.

Separation rates also vary across States and Territories, as shown in Table 7, for a variety of factors. The two Territories have the highest separation rates amongst the eight jurisdictions. In the table, Queensland has the lowest separation rate among permanent teachers in both primary and secondary sectors.

Table 7: Separations (other than through leave of absence) from the government permanent teaching workforce, as a percentage of that workforce, 1996 and 1999. [1]

	Primary		Secondary	
	1996	1999	1996	1999
REASON FOR THE SEPARATION				
Retirement	0.9	1.5	0.8	1.1
Resignation	1.8	2.2	2.5	2.9
Other [2]	0.2	0.3	0.7	0.6
Total	*2.9*	*4.0*	*4.0*	*4.7*
STATE AND TERRITORY				
NSW	3.1	4.1	3.6	4.7
VIC [3]	2.5	3.7	4.6	3.9
QLD	2.3	2.3	3.3	3.6
SA	3.0	3.1	4.4	3.5
WA	2.2	2.9	3.6	3.9
TAS[3]	3.7	3.1	5.5	5.2
NT	12.4	12.7	16.6	16.7
ACT	4.0	8.0	5.0	7.3

Source: DETYA (2000,b)
Note: 1 Data used in this table were headcounts of teachers (not FTE).
Note: 2 The 'other' category includes deaths, retrenchments, dismissals and transfers to the Public Service within the State or Territory
Note: 3 The 1999 estimate for Tasmania is based on 1998 data; the 1996 estimate for Victoria is based on 1997 data.

Leave is provided to teachers for a variety of purposes. The types of leave and their availability vary from system to system. One important reason for taking leave among the female teaching workforce is to look after children while they are still young and not at school. States may offer extended leave periods for such purposes, ranging from five to seven years. Queensland provided data which show that maternity accounted for around 40 per cent of extended leave taking in recent years.

During 1999, 8.4 per cent of the permanent workforce in the government primary sector and 8.3 per cent in the government secondary sector took leave lasting at least one term[2]. This is considerably higher than the exit rate due to retirements, resignations and other non-leave related separations. Leave for a year or more has often represented the bulk (half or more) of total gross separations.

[2] These data relate only to Victoria, Queensland, South Australia, Western Australia and the Northern Territory. These jurisdictions were the only ones that provided data on leave according to the DETYA stipulated definitions.

Estimate of net separations from the government sector

The findings of the DETYA 2000 survey and other studies suggest that typically in the government sector:

14. around 8 per cent of teachers go on leave each year. However, while some teachers go on leave others return. It can be expected that some teachers going on leave will resign while they are on leave, so that there will be a net loss of teachers through this process. Data from the States and Territories indicates that separations arising from (net) leave movements have been in the vicinity of 2 per cent a year;
15. resignations fluctuate over the business cycle and across States, with the rate being somewhere between 2 and 4 per cent a year. A commonly accepted rate for the average resignation rate is 2 per cent a year and, as Table 7 shows, it is on the lower side for primary and on the higher side for secondary;
16. in the 1990s retirements appear to be have been just below 1 per cent a year and reached 1 per cent in 1999. Results from the DETYA 2000 survey and other analyses suggest retirements are likely to rise in the future as baby boomers start to retire.

This data suggests that exits from teaching through leave, retirements and resignations can amount to typically between 8 and 11 per cent a year within the government school system. When teachers returning from leave are taken into account, however, the estimate for net separations from the government school system falls to typically around 5 to 7 per cent a year.

Estimate of net separations from the teacher labour market as a whole

The above estimate of net separations provides an indication of replacement demand for the government school sector only. No data have been collected from the non-government sector for this report. Caution, therefore, needs to be applied to the use of data on replacement demand for the government sector in drawing implications about replacement demand in the non-government sector. More importantly, though, the estimate of replacement demand for the government sector added to the replacement demand from the non-government sector is likely to be an over-estimate for the replacement demand for the teacher labour market as a whole.

Replacement demand for the teacher labour market as a whole can be quite different to the replacement demand for each sector within it because there is considerable movement of teachers between sectors. When a teacher resigns from a sector to move to another, the movement counts towards the replacement demand for the sector from which the resignation occurs, but it does not contribute to the replacement demand for the teacher labour market as a whole. Only resignations which lead to exits from the teaching profession contribute to replacement demand for the teacher labour market.

Because of this churning effect, replacement demand for the teacher labour market can be substantially lower than the sum of replacement demand for the sectors within it. For instance, even though replacement demand in the government sector can be, say, five per cent of the workforce nationally and four per cent in the non-government sector, replacement demand for the national teacher labour market could be two or three per cent of the workforce according to the extent of movement between sectors.

Some indication of the net separation from the teaching profession is provided by work undertaken by Monash University on 'net replacement demand' for various occupations, including teaching. That research suggested that 'net replacement demand' for teachers in Australia averaged around 2.9 per cent a year over the ten year period to 1996. Net replacement demand in that study was estimated by analysis of labour force data by age and was calculated, effectively, as exits from the teaching

profession (gross replacement demand) net of entries (other than new graduates) and re-entries into the teaching workforce—hence the term "net replacement demand". Because net replacement demand so calculated incorporates additional entry and re-entry categories such as the return of teachers from leave, the Monash University net replacement demand provides a lower bound for the rate of net separation of teachers as defined above.[3]

Box 1:
Two Queensland case studies of teacher separations

The most detailed published Australian sources of separations data are contained in the teacher labour market studies for Queensland. These studies include an Office of Higher Education (OOHE) report published in 1997 and the Pacific Analytics report prepared for Education Queensland in 2000. The Pacific Analytics report provides the most in-depth analysis of supply and demand of teachers produced in Australia to date and draws on expertise developed in Canadian studies.

The OOHE report provides a detailed graphical profile of net separations. Elements in the total include:

- resignations and retirements which rise from about two per cent in 1991 to 3 per cent in 2000;
- expired contracts, terminations and dismissals which run at about one per cent a year;
- net leave composed of persons going onto leave (averaging 6 per cent a year less returners of just over three per cent a year).

This gives overall projected net separations from the Queensland Government school system of the order of 3+1+(6-3)=7 per cent a year in 2000.

While the average projected net separations or replacement rate for all teachers was estimated at just over seven per cent a year, the actual replacement rates for 1990 to 1996 were as high as 6.35 per cent a year and as low as 3.74 per cent a year, emphasising the variability in these rates over time.

One conclusion from the OOHE study is that trend separations in Queensland were rising. This was confirmed by the Pacific Analytics report which provided forecasts to 2009.

In particular, he Pacific Analytics report shows that separatio is almost doubled over the period 1981 to 1996. For the forecast period between 1999 and 2009, separations (referred to as attrition in the report) was projected to rise from 2800 teachers a year to over 3500 a year. This was made up from a steady level of resignations (about 450 a year) and of leave of absence (about 1800 a year) and a strong rise in retirements from 300 a year in 1996 to nearly 800 a year by 2006. This corresponds to approximate attrition (separation) rates of about 9 per cent in 1999 and 9.4 per cent in 2009. (Net of leave of absence, the separation rates were around 3-4 per cent).

Both of these studies offer slightly differing measures of separations and serve to emphasise problems of definitions and measurement. Actual levels of separation provided by these two studies need to be seen in context and are not typical of Australia where other studies and sources suggest that separation levels seem to be much less than for Queensland.

[3] As discussed in Chapter 6, the net replacement demand provides a reasonable estimate of the net loss of teachers to the profession. This net loss would need to subtract from net separations entries into teaching from other losses as well, including teachers re-entering teaching and immigration.

Chapter 6

FACTORS AFFECTING THE SUPPLY OF TEACHERS

Most of the annual requirement for teachers is supplied from previously employed teachers who return at the start of each year. The analysis in this chapter centres on the sources of additional (or new) teachers to meet additional demand.

The principal sources for additional teachers at an aggregate level are:

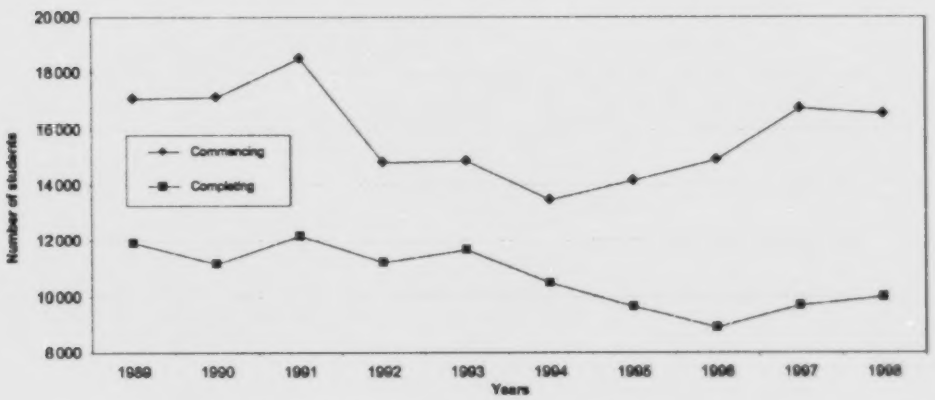
- New graduates;
- Teachers returning from leave;
- Former teachers returning to teaching;
- The pool of relief and casual teachers;
- Unemployed teachers and teachers marginally attached to the labour force;
- Overseas migration.

New graduates

There are two main routes for gaining a teaching qualification: a four year undergraduate degree in initial teacher training, or a one or two year graduate diploma in teaching (generally called a Graduate Diploma of Education), following completion of an undergraduate degree in a non-teaching area, such as science or arts. Both streams provide a source of graduate teachers.

Total numbers of teacher training commencements and completions, covering undergraduate courses and graduate diploma courses (referred to postgraduate courses hereafter), for the last 10 years for which data are available are shown in Chart 13. Further details are in Attachment 5 and Attachment 6. Total commencements have been rising steadily since 1994 so that towards the end of the 1990s they were nearing the levels at the beginning of the decade. This is reflected, with a lag, in the rising levels of completions since around 1996.

Chart 13: Total teacher commencements and completions, 1989 to 1998, Australia

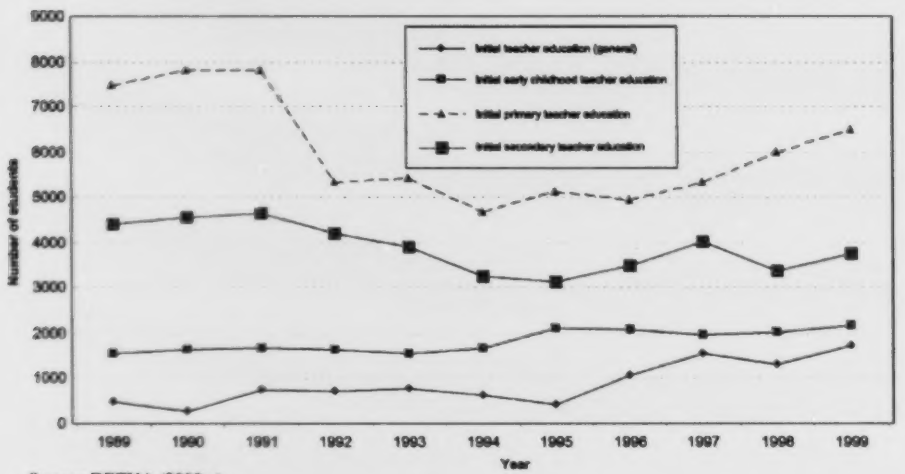


Source: DETYA (2000, a)

Trends in teacher training commencements and completions

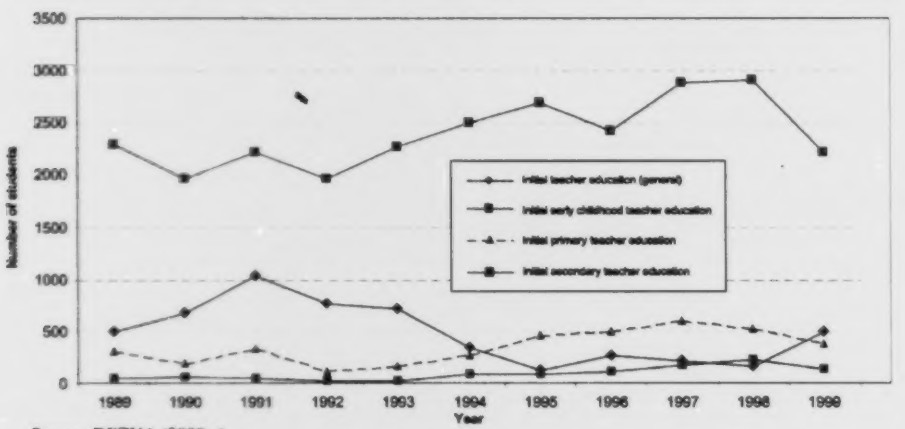
The breakdown of commencements into undergraduate courses and graduate diploma courses is shown in the two additional charts (Chart 14 and Chart 15). Commencements fell sharply in 1992 and by smaller amounts in the next two years before recovering strongly in the second half of the decade. Currently commencements are close to the levels at the beginning of the decade, roughly 17 400.

Chart 14: Undergraduate teacher commencements, 1989 to 1999, Australia



Source: DETYA (2000,a)

Chart 15: Postgraduate teacher commencements, 1989 to 1999, Australia



Source: DETYA (2000,a)

Numbers of commencements in primary and secondary teacher training courses have tended to be of broadly the same magnitude over time. In the late 1990s commencements in both were in the range of
6000 to 7000 per annum.

Commencements in primary initial teaching courses have been more variable than for courses in secondary teaching during the 1990s. After falling in the early 1990s, commencements in primary courses have been rising since 1996.

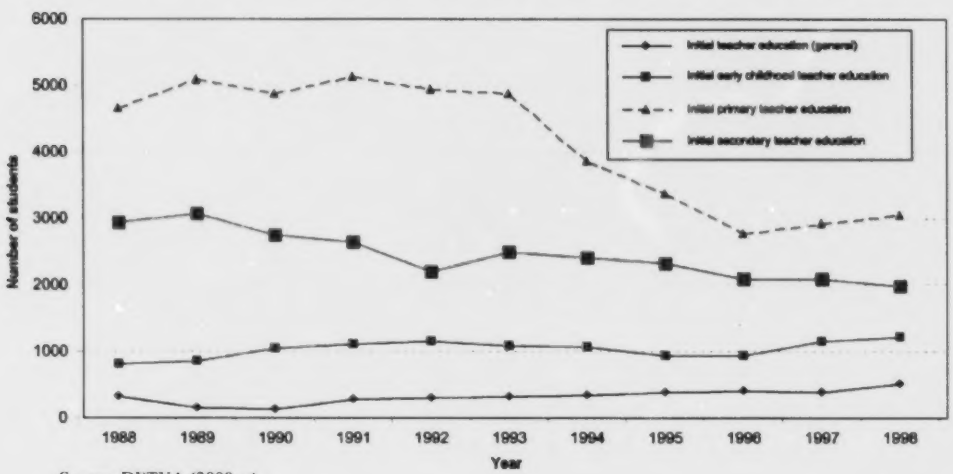
Commencements in secondary teaching courses have been more stable during the 1990s. However, this masks a difference in the trend between undergraduate and postgraduate courses. Undergraduate course commencements oscillated in the second part of the 1990s, while postgraduate course commencements rose reasonably steadily and made up for the fall in undergraduate commencements.

Postgraduate commencements are a significant component of secondary teaching commencements, representing about 1/3 of total commencements in this area. By contrast, postgraduate commencements represent a relatively minor component of commencements in primary teaching courses.

Completions, shown in Charts 16 and 17, generally mirror commencements but with a four year lag, although the fact that a substantial proportion of commencements are one year postgraduate diplomas complicates this relationship. Teacher completions in 1998 (the last year for which data are available) were over 10 000, slightly lower than at the beginning of the 1990s.

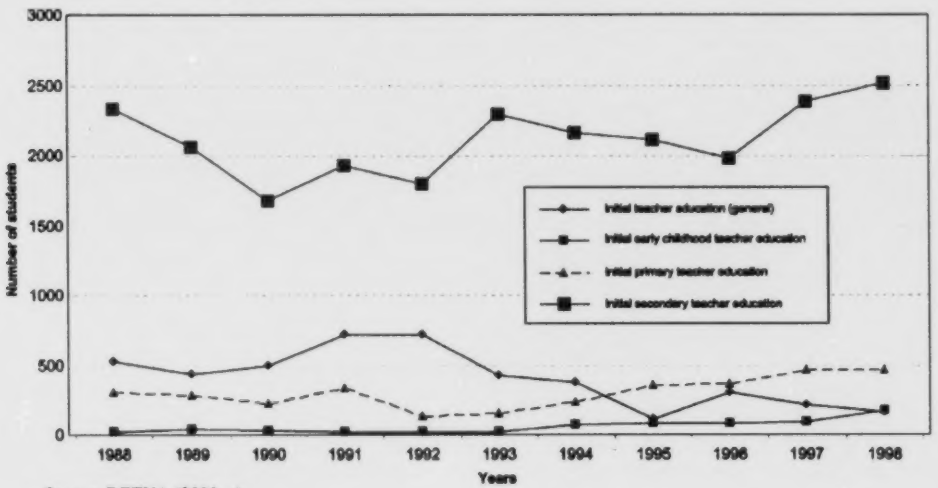
One development evident in the charts is the rising importance of postgraduate completions as a source of new graduates. The data suggest that this type of qualification is being used increasingly as an entry point to teaching especially for secondary teaching (Chart 17). The trend rise in postgraduate completions has also assisted in stabilising the output of teacher trainees.

Chart 16: Undergraduate course completions in teaching, 1988 to 1998, Australia



Source: DETYA (2000, a)

Chart 17: Postgraduate course completions in teaching, 1988 to 1998, Australia



Source: DETYA (2000, a)

Destination of new graduates

Not all persons graduating from teaching (completing courses) are available as additional teachers.

Data from the Graduate Destination Survey conducted by the Graduate Careers Council of Australia (GCCA) indicate that most but not all teaching graduates go into the labour market immediately after graduating. The majority of graduates who do not enter the labour market undertake further study. A small proportion take time off before looking for work. Both of these groups effectively delay their entry into the labour market, some by a year and others (e.g. Masters and PhD students) for longer.

Of the graduates who enter the labour market immediately after graduating, almost all are looking for full-time employment. The Graduate Destination Survey gathers information about the job obtained and this shows that in 1998 around 87 percent of all graduates in full-time employment had obtained a job in education. The rest took up positions in government and the private sector, although it is not known whether this is by choice or involuntary.

No information is available from the Graduate Destination Survey about the job of the small proportion of graduates who are only seeking part-time work, although it may be assumed that their preferences are similar to those of the full-time job seekers.

Table 8: Destination of graduates from initial teacher education courses, 1998

Category/percent of total	Primary	Secondary
Employed full-time		
Government/private/health/other	5.0	8.2
Education	39.2	55.2
Seeking full-time employment	17.3	13.5
Not seeking full-time work	10.1	8.7
Full-time study	26.6	12.1
Unavailable	1.7	2.3
Total	***100.0***	***100.0***

Source: GCCA (1999).

Accordingly, in this report it is assumed that 87 percent of new teaching graduates make themselves available for teaching positions. This may be a conservative estimate, as some of those who gain employment outside teaching may have preferred a job as a school teacher. In that case, the proportion could rise if the teacher labour market tightens.

Teachers returning from leave and former teachers returning to teaching

The counterpart of teachers going on leave (discussed in Chapter 5) is teachers who return to the classroom as permanent, full- or part-time teachers after a period of extended leave. These teachers form a very large annual flow.

Teachers returning from leave are an important source of new teachers in the annual intake in all States. Data provided by the education authorities indicate that around six percent of government permanent workforce in 1999 was made up of teachers returning from leave. The percentages were more or less the same in both the primary and secondary sectors.

In any one year, the number of teachers returning from leave may exceed or be less than those going on leave. However, over a longer period, it can be expected that the number of teachers who return is less than the number of teachers who leave as some teachers resign while on leave. Longer term data are not available but data from 1999 from five States and Territories which were able to provide information on a consistent basis indicate that teachers going on leave exceeded those returning[1]. The difference expressed as a percentage of the permanent teaching workforce was around two percentage points. Returning teachers exceeded leavers during that year in only one State.

A second and related group is those teachers who resign and leave teaching altogether, only to return at a later stage. It appears that some of these teachers resigned from teaching only because they were unable to secure leave of absence long enough for their needs. To the extent that these teachers intended from the start to return to teaching, they are akin to those teachers who go on extended leave. Others, however, would have left with no clear intention of returning to teaching. On returning to teaching, these former teachers re-enter the classroom directly from outside teaching or via the relief and casual teacher arrangements. Information on this group is limited.

The teacher pool

The teacher pool refers to teachers not currently employed as on-going teachers who, nonetheless, are available for such positions. The pool consists broadly of three groups:

[1] The States and Territories were Victoria, Queensland, South Australia, Western Australia and the Northern Territory.

- teachers on waiting lists for on-going jobs;
- relief and casual teachers who may be available for on-going positions; and
- former teachers not currently actively involved in teaching who may be encouraged to return to teaching.

Number of teachers on 'employment lists' and other recording mechanisms in government schools

New South Wales, Queensland, Western Australia and South Australia are the only States with a recording system whereby people with teaching qualifications who are not employed as teachers can indicate their interest in teaching and be placed on an employment list for permanent positions in teaching.

In March 2000 there were over 18 000 seeking employment as teachers in New South Wales government schools, which represents over 35 per cent of the permanent teaching workforce. This is a substantial and significant reserve on which to draw, although it is recognised that not all seeking employment are available to teach in all areas of the State, or qualified to teach in all subjects.

Queensland maintains a comprehensive list of applicants for employment with Education Queensland. In 1999 there were 10 815 active applications from qualified teachers not employed by the department.

South Australia provides for all applicants for teaching positions to be placed on a list. The list also records up to two subject areas. In 2000, there were some 3000 applicants in this pool seeking permanent or contract teaching positions.

In Western Australia the Education Department keeps a computerised, centralised system of qualified teachers who are seeking employment. Experience suggests that there are usually between 1500 to 2000 graduates and re-entrants who are not currently employed.

Relief and casual teachers in government schools

Some indication of the size of the stock of teachers who may be available for permanent positions in teaching can be obtained by looking at the pool of relief and casual teachers. Every State and Territory has a system of relief and casual teachers, some of whom are only available for relief work, but others are available for permanent and/or contract positions.

An indicative estimate of the national pool of relief and casual teachers can be obtained by comparing the ABS data from the Labour Force Survey and the ABS Schools Collections. This indicates that in August 2000 there were at least 29 500 relief and casual teachers in Australia[2]. It must be emphasised that this figure is a snapshot. The figure is likely to be substantially larger, however, because not all relief teachers get work during the ABS survey period and therefore do not get picked up in the employed stock.

More direct evidence on the number of relief and casual teachers is available from the State and Territory education authorities. For instance, Tasmania maintains a Temporary Teacher Register for those interested in undertaking temporary (for replacement or short term contracts) or relief work. Currently about 1000 people have registered (or 18 per cent of the government workforce). In South Australia, 1200 teachers were on a list as seeking only casual relief teaching. In Western Australia,

[2] The Labour Force Survey counts as employed teachers all those who were employed or had worked during the survey period, whether they were permanent, on contract or casual. The School Collection counts only permanent and contract teachers and those casual teachers who were relieving teachers on extended leave. The difference between the two estimates therefore equals the number of relief and casual workers who had been called in during the survey period.

there are approximately 6000 teachers currently available for relief teaching however the locations and type of teaching they are willing to undertake are often heavily restricted.

Relief and casual teaching has often been a way for teachers who did not want an ongoing position (for a variety of reasons) to stay in the teaching labour market until they were ready to apply for ongoing positions. In Queensland, for example, permanent teachers are subject to the transfer system. Teachers may prefer to remain as casuals in order to avoid the possibility of being transferred. This suggests that much of casual teaching may be voluntary. Nevertheless, it could be assumed that under appropriate circumstances some relief and casual staff could be encouraged to return to ongoing teaching sooner than they may have intended.

Other pool teachers

There are three other groups which can add usefully to the supply of teachers and teachers' time:

- those recorded as unemployed by the ABS ;
- teachers who are not actively seeking employment but would be available to take up teaching if a suitable job came up; and
- contract teachers on less than their desired annual hours of work.

In the August 2000 Labour Force Survey the number of *officially unemployed* teachers was just over 3000. This is a relatively small number and most of these would be picked up in the employment lists mentioned above.

There are a relatively high number of *teacher qualified persons not working in the profession*. Their number exceeds the number of teachers themselves. Some of them are working in teacher-related positions within education organisations while others are in generally unrelated jobs. The fact that the number is large suggests that, in principle at least, there may be some scope for pulling back into teaching some of these former teachers under certain circumstances, as suggested by evidence from the United Kingdom and New Zealand.

Straker (1991) noted that in the United Kingdom it was estimated that 'the pool of qualified teachers under the age of 60 which is currently inactive exceeds the number of teachers who are currently in teaching posts'. Straker noted that in 1989 almost 60 per cent of new appointments were 'returners' to the profession and that this pool remained a valuable source of recruitment, provided that 'updating' of skills and knowledge of curricula could be achieved.

Pool teachers, including those outside the teaching workforce, have also been important in the New Zealand teacher labour market. It is interesting to note, for example, that the primary school teacher shortages in New Zealand in the 1990s were mostly resolved by supply from the pool.

There is no information in Australia about the extent of under-employment of contract and part-time teachers. The ABS collects information in labour force surveys on part-time workers wanting to work more hours. This source could be used to provide an indication of the extent of under-employment among part-time teachers, but not for contract teachers who may not get continuous work during the year.

Overseas migration

Data from Department of Immigration and Multicultural Affairs (DIMA) presented in Table 9 and Table 10 indicate that, at least in recent years, Australia has been a net gainer of teachers through the migration process.

Most of the inflow/outflow is associated with Australian residents leaving to go overseas or returning. This could be explained by a desire by teachers to combine work with travel. The figures suggest that

each year around 4000-4600 teachers go on an overseas 'stint' with this number increasing in the last four years. Preston (2000), for example, has estimated that around 2000 teachers have been recruited while still in Australia by recruitment agencies for the year 2000-01 northern hemisphere school year. As a result of this upward trend in residents leaving for periods overseas, the previous balance between resident teachers leaving and those returning has shifted to a net loss.

Table 9: Arrival of teachers to Australia by migration category

ASCO Code	Year	Settler arrivals	Long term residents returning	Long term visitors arriving	Permanent and long term arrivals
240	1996–97	1 636	3 867	1 249	6 752
241	1997–98	1 449	3 932	1 367	6 748
241	1998–99	1 566	3 078	1 543	6 187
241	1999–00	1 903	3 956	1 747	7 606

Source: DIMA unpublished data.

Note: Data exclude school principals. ASCO 2 is used for all years except 1996–97 when ASCO 1 was still in use.

However, the net gains from permanent settler and long term visitor movements more than outweigh this loss. In net terms, therefore, Australia has tended to gain around 800–1300 teachers a year. The net outflow for 1998–99 appears to be an aberration when considered against data from other years. It seems to have been due to an unusually low figure for the number of residents returning to Australia in that year.

Table 10: Departure of teachers from Australia by migration category

ASCO Code	Year	Permanent departures	Long term residents departing	Long term visitors departing	Permanent and long term departures	Overall net intake
240	1996–97	641	3 843	927	5 411	1 341
241	1997–98	656	4 048	1 074	5 778	970
241	1998–99	950	4 546	807	6 303	–116
241	1999–00	1 151	4 668	963	6 782	824

Source: DIMA unpublished.

Note: As for Table 9.

The net migration gain of around 1000 a year represents a small but significant addition to the supply of teachers in Australia. It is equivalent to around one tenth of the supply of new graduates. At the same time not all of these teachers will take up a teaching job in Australia, although that is most unlikely for migrants with teaching qualifications who come into Australia as principal applicants.

It needs to be noted that Australia does not actively recruit overseas as does New Zealand. Furthermore, teachers are no longer on the Migration Occupations Demand List (MODL), which is reserved for skills in high demand in Australia. Applicants for migration with skills on MODL get extra points and streamlined migration procedures.

Relative importance of the various sources of teacher supply

The major sources of supply of additional teachers discussed above include new graduates, teachers returning from leave, former teachers returning to teaching, the pool of relief and casual teachers, unemployed teachers, teachers marginally attached to the labour force and qualified teachers from overseas migration. The teachers that are most easily quantified are new graduates, migrations and teachers returning from leave.

On average graduates contribute the equivalent of four to five per cent of the workforce a year to the stock of teachers, while migration flows have contributed about one half of a percent of the workforce in net terms in recent years (or around one tenth of graduate supply on average). Teachers returning from leave also represent about 6 per cent of the teaching workforce.

Other sources of supply are more difficult to quantify. Former teachers (not on leave) returning to teaching are recognised as being an important source, but the only evidence of this comes from overseas rather than Australia. On the other hand, there is more information on the pool of teachers on employment lists for jobs, and those who work as relief and casual teachers and who may therefore be available for ongoing position. This evidence suggests that in three States alone (New South Wales, Queensland and Western Australia) there are around 31 000 teachers on employment lists for ongoing teaching jobs. The number of relief and casual teachers is around 30 000-40 000 Australia wide. Taken together, this suggests that the pool of teachers available for ongoing vacancies is relatively large, although there is some overlap between the two categories.

How important have these sources of supply been in filling the teaching vacancies that have arisen? In the DETYA 2000 survey, data were provided on new teachers recruited during 1999 and whether they were graduates from the previous year or experienced teachers. New teachers excluded teachers returning from leave but included those recruited to contract positions lasting at least one term as well as to permanent positions. These data are presented in Table 12.

Table 11 shows that while there is considerable variation between States and Territories, at the national level only around 45 per cent of new teachers in the government sector were graduates from the previous year. Over half of all recruited new teachers were experienced teachers. These would have come from one of the other sources of supply discussed in this chapter. In addition, some would have moved across from the non-government sector or from another State. These results suggest that these other sources of supply can be very significant.

In this context, it is important to note that by its very nature the flow back into the teaching workforce from new graduates and experienced teachers is dependent on a number of factors and can vary over time. The most important factors are likely to be the level of demand for teachers and the opportunities available in other areas of the economy. Strong demand is likely to attract more pool teachers while strong competition from new graduates and good job prospects outside teaching are likely to have the opposite effect. To some extent, the large pool of people with teaching qualifications outside teaching acts as an automatic stabiliser which helps to balance the demand for and supply of teachers.

Table 11: Previous year's graduates as a proportion of all new teachers recruited into the government sector during 1999

	Primary	Secondary	Total
NSW	19	22	21
VIC [1]	76	74	75
QLD	68	68	68
SA	2	3	2
WA	48	51	49
TAS	47	74	72
ACT	72	62	67
Australia	***45***	***46***	***45***

Source: DETYA (2000, b). Northern Territory data were not available.

Note 1: In Victoria there is a large number of contract teaching staff who cease contract with a break before the next contract. These contract staff are not counted as 'new experienced' teachers when they start their new contract. As a result this tends to overstate Victoria's reliance on newer graduates to fill positions.

Chapter 7

Projections of teacher demand and supply to 2003

Building on the discussion and analysis of the previous chapters, this chapter presents projections for teacher requirements and the supply of teachers up to 2003, at the national and State and Territory level. The year 2003 is chosen as this is the last year for which projections of graduations can be based on actual data for commencements in undergraduate courses.

The analysis in this chapter starts by providing projections at the national level, including an assessment of whether projected graduations are likely to lead to a tightening or loosening of the labour market for teachers at the national level in the early 2000s, compared to that at the end of the 1990s. The analysis then goes on to examine projections at the State and Territory level and concludes by discussing sources of flexibility on the demand and the supply side which assist in the adjustment of the teacher labour market within a jurisdiction and across jurisdictions.

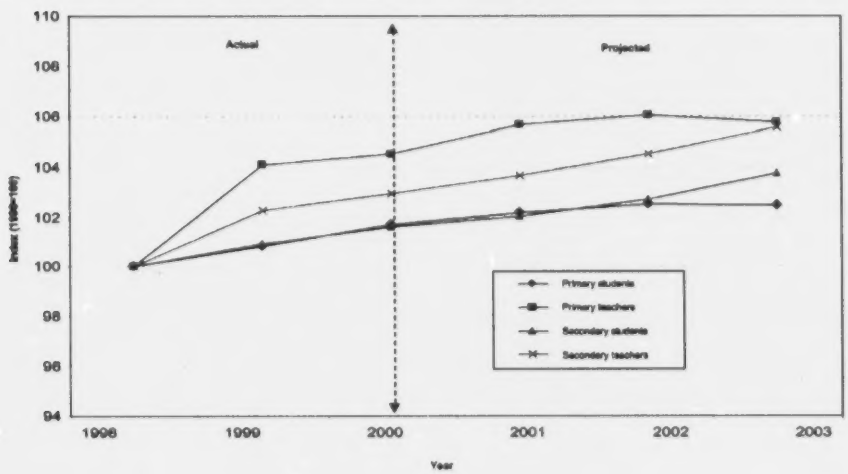
A note of explanation about the projections is warranted. Projections in this report are based on assumptions about key factors which influence demand and supply. As with all projections, some of these factors may not occur. Accordingly, these projections are not intended to be, nor should be interpreted as, forecasts of likely outcomes. The main purpose of the projections is to provide some indication of the possible direction of the labour market for teachers in the next four years as the basis for policy development.

Outlook for the teacher labour market at the national level

Projection of students and the teacher workforce

Projections for enrolments in the primary and secondary sectors at the national level are shown in Chart 18. Projections for the government sector were provided by the State and Territory education authorities. The information for the non-government sector was derived by DETYA. Further details are provided in Attachment 3 and Attachment 4.

Chart 18: Projected students (FT) and teachers (FTE), 1998 to 2003, Australia



The projections for enrolments are based on the ABS population projections by age and assume that grade progression rates remain at the 1999 level. Teacher numbers are broadly based on projected enrolments (for the government and non-government sectors, within the primary and secondary levels) divided by the most recent student-teacher ratios, but education authorities have used additional information to estimate teacher requirements within the government sector in their State or Territory.

Chart 18 indicates a slowing down in the growth in enrolments in the post 2000 period, particularly in the primary school sector where students are projected to grow by only 0.5 per cent between 2000 and 2003. A similar slowing down is projected for senior high school students but junior high school students are expected to continue growing at a stronger pace so that overall secondary students will grow faster than primary students. In some States and Territories enrolments will actually decline. The reasons for these patterns are predominantly due to the trends in the school age population.

Teacher numbers are projected to largely reflect these enrolment trends. After 2001 primary teacher requirements are expected to remain stable, but secondary teacher requirements are projected to continue increasing.

Projection for the number of teachers to be recruited to 2003

As indicated in Chapter 4, teacher recruitment is made up of the need to satisfy the growth in requirements and the need to replace teachers who separate from the jurisdiction. Table 12 provides information on the projected number of teachers that will need to be recruited within Australia by the government and non-government sectors at primary and secondary level.

Table 12: Estimated annual recruitment of teachers (head count), 2000 to 2003.

	2000	2001	2002	2003
PRIMARY				
Government	5 600	5 300	4 900	4 800
Non-government	1 200	1 150	1 150	1 050
Primary total	6 800	6 450	6 050	5 850
SECONDARY				
Government	4 100	3 800	4 100	4 750
Non-government	1 900	1 900	1 900	2 400
Secondary total	6 000	5700	6300	7 100
Total	***12 800***	***12 150***	***12 350***	***12 950***

Sources: DETYA (2000, b) and other estimates by DETYA.

For the government sector, recruitment needs have been calculated by the State and Territory education authorities taking into account expected growth in the teachers' workforce and replacement demand. They are based on each State's and Territory's historical data and experience and understanding of the workings of the teacher labour market in that State or Territory. In the case of the non-government sector, estimates have been derived by DETYA as follows:

- additional teachers required have been calculated from the sum of (a) a demand component which is the projected increase in the workforce each year, and (b) the replacement component;
- numbers for the non-government sector workforce have been projected by dividing future enrolments by the 1999 STR;

- for the non-government sector replacement is estimated as (i) the rate of retirement in the government sector times projected non-government workforce plus, (ii) a rate of resignations which is *half* that evident in the government sector in each State times projected non-government workforce. This assumes a lower separation rate from the non-government sector. (For the Northern Territory historic separation levels have been used for future replacement);
- the replacement (separations) and demand components have been summed to give totals for the rows estimated in Table 12.

The results from the recruitment projections show different needs for the different levels of schooling :

- in the primary sector, recruitment is projected to fall from 6800 in 2000 to around 5900 in 2003;
- in the secondary sector, projected recruitment is estimated to increase from 6000 in 2000 to over 7000 in 2003.

Projected completions from initial teacher training courses

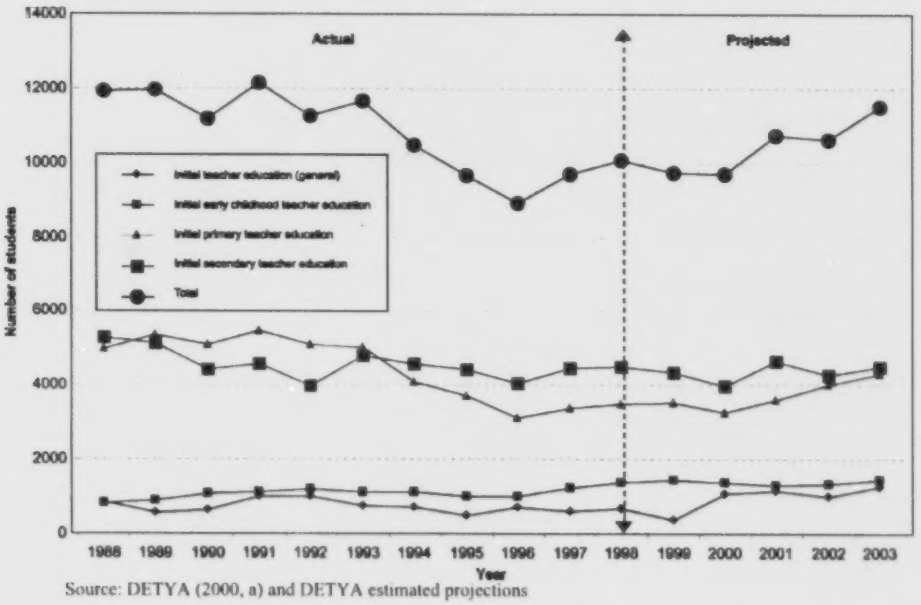
Projections of completions from initial teacher training courses can be derived from information on commencements in these courses (discussed in section 6 and shown in charts 15 and 16) and applying a completion rate. To project completions in the period to 2003, the following assumptions have been made for the different streams:

- undergraduate completions;
  - for the period to 2003, completions equal commencements four years earlier multiplied by an average completion rate of 60 per cent;
- post-graduate completions;
  - for the period to 2000, completions equal commencements one year earlier multiplied by an average completion rate of 85 per cent;
  - for the period between 2001 and 2003, commencements in postgraduate teaching courses have been assumed to run at a level equal to the average during the previous five years. During that time postgraduate commencements were on a slightly upward trend.

The 'completion rates' have been calculated by comparing commencements and completions, suitably lagged, over the 1990s and averaging. While completion rates so derived can vary from one year to another, for a variety of reasons, it has been assumed that these historical average or trend completion rates will apply into the next few years.

As shown in Chart 19, completions are projected to rise gradually in the period to 2003 to levels which approach those at the start of the 1990s. The main reason for this projected recovery is the increase in completions from Initial Primary Teaching (and Initial General Teaching) courses, arising from recent increases in commencements in these courses. The rise in completions from secondary teacher training courses is projected to be more subdued, based on the assumptions described above. Further details are in Attachment 7.

Chart 19: Teacher course completions by course type, actual and projected, 1998 to 2003, Australia



Source: DETYA (2000, a) and DETYA estimated projections

As discussed in Chapter 6, around 87 per cent of all graduates make themselves available for teaching, some after undertaking further study. On this basis, the number of new graduates available to the teacher labour market in the next three years is projected to rise from 8240 in 2000 to 9770 in 2003, as shown in Table 13.

Table 13: Projected graduates from Initial Teacher Education courses and those available for teaching positions, 1999 to 2003

	1999	2000	2001	2002	2003
Graduates completing initial teaching courses					
Initial primary	3 515	3 282	3 620	4 009	4 309
Initial secondary	4 360	3 990	4 646	4 257	4 493
Early childhood	1 460	1 365	1 307	1 350	1 440
Initial general	384	1 060	1 154	1 013	1 251
Total	*9 720*	*9 698*	*10 727*	*10 629*	*11 495*
Graduates available for teaching jobs	*8 260*	*8 240*	*9 120*	*9 040*	*9 770*

Source: DETYA (2000,a). Refer to Chapter 6 for graduate availability rates.

Adequacy of projected graduate numbers to meet teacher requirements

The recruitment needs of the government and non-government school system as calculated above is not a measure of the level of new graduates required to satisfy the schools' teacher requirements. There are two main reasons for this. First, some recruitment needs arise because teachers move from one jurisdiction to another and not out of teaching. That element of recruitment is not associated with a loss of teachers but simply with a reshuffling of teachers across jurisdictions. Second, graduates are not the only source of supply to meet the recruitment needs. Many teachers return to the teaching workforce after a period outside it and some come in through migration. For these reasons, recruitment needs as calculated above will exceed the requirement for new graduates.

The more appropriate way to assess whether graduate numbers are adequate is to note that, in order to ensure that teacher labour markets are in balance, the flow of teachers from graduations and immigration provide at least as many teachers as are lost to the teaching profession in net terms plus those required because of growth in the teaching workforce. A lesser number could be maintained for a period if there was an excess pool of available and/or under-utilised teachers, but this would eventually be depleted.
As that begins to happen, it would start to put increasing pressure on the teacher labour market.

While growth in requirements can be estimated quite readily, the net loss to the teaching profession is not easily derivable. The best estimate at this stage is provided by the work of Shah (1999) who reports that the *net replacement demand* for the teaching profession in Australia as a whole is of the order of 2.9 per cent a year across the full regular contract and casual teaching workforce. The way this estimate was calculated, based on ABS Labour Force Survey data, means that the estimate effectively represents the loss through retirements, resignations and out migration to the profession, after netting out those who come back and/or enter the profession in Australia through immigration[1].

Over the period 1999 to 2003, the loss rate calculated by using the results from Shah works out at an average of 7000 new teachers a year (on a headcount basis) across the primary and secondary sectors. By contrast, the growth demand over the same time period is expected to be of the order of 1500 a year (on a headcount basis), as noted earlier.

This suggests that balance in the teacher labour market in the next few years can be maintained with a flow of 8500 new graduates a year on average, across the primary and secondary sectors. This is broadly consistent with the graduate requirements implied in the results from the DETYA 2000 Survey reported in Table 12, after taking into account the fact that less than half of government teacher recruitments nationally was met by hiring new graduates (see Table 11). If this proportion were applied to the projected recruitment for 2000 to 2003 in Table 12, around 6000 to 6500 graduates would be needed annually to satisfy these projected recruitment needs. The number of graduates at the national level that are projected to be available for teaching jobs in the next few years (starting at 8260 in 1999 and rising to 9770 in 2003) therefore appears to be broadly in line with the requirements for a stable teacher labour market at the national level. In the period after 2003, however, with retirement pressures starting to emerge, overall replacement needs will rise and an increase in graduate numbers will become necessary (see Chapter 8 for a discussion of this development).

[1] It could be that the loss rate to the profession is higher for regular and contract teachers than for relief and casual teachers, who are included in the Shah estimate. However, as the proportion of the relief and casuals in the teaching workforce at any one time is relatively small (under 20 per cent), their inclusion in the Shah study should not have influenced the loss rate of regular and contract teachers significantly.

Projected trends in teacher requirements and graduations by State and Territory

The trends in teacher requirements and in graduations reported for Australia are discussed at the State and Territory level in this section. The data on government teacher requirements were provided by the State and Territory education authorities while DETYA estimated teacher requirements for the non-government sector.

Graduations data by State and Territory have been obtained by classifying the university at which the initial teacher training course was conducted to the State or Territory in which the university is located, or where the university has campuses in more than one State, to that State or Territory where the campus offering initial teacher training courses is located. The Australian Catholic University, with campuses offering teacher training courses in most of the three States and one Territory where it operates, has been omitted from the statistics. The Australian Catholic University produces less than 5 per cent of all teacher graduates.

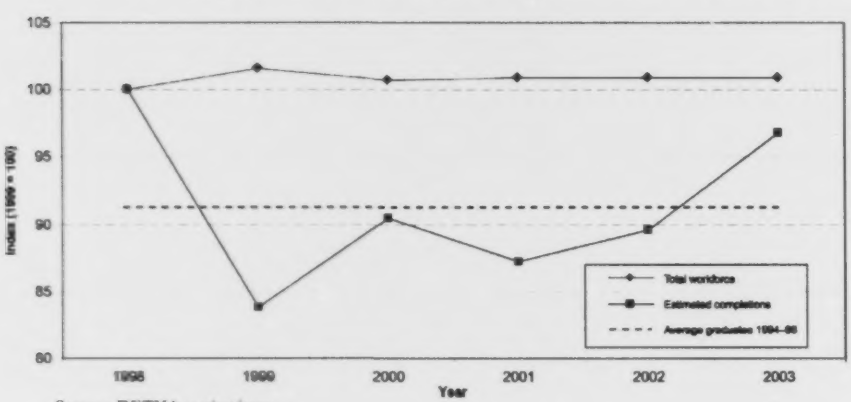
New South Wales

Student enrolment growth in New South Wales in the period to 2003 is expected to be relatively modest, averaging less than half of one percentage point a year. This is still above the national average. The main student enrolment growth is expected to be at the secondary school level, and especially in the non-government sector.

Reflecting these enrolment trends, the teaching workforce in New South Wales is projected to increase by less than two per cent in total in the period to 2003 if student-teacher ratios remain unchanged (refer to Chart 20). This is a lower growth rate than experienced in the last five years.

Projections of completions from initial teacher training courses suggest that the number of graduates, while showing some volatility one year to the next as has been common in this labour market in the past, will on average in the five years between 1999 to 2003 be just below the annual mean in the previous five years (1994 to 1998). Because of this, and the small increase in teacher workforce numbers, the New South Wales average training rate (i.e. the ratio of completions to employment) for the projection period is estimated to be slightly lower than during the five years preceding the projection period (i.e. 4.6 per cent compared to 4.9 per cent). Note, however, that during the latter part of the projection period completions are expected to be on a steadily rising trend (Chart 20).

Chart 20: Projected teacher workforce and new graduates, 1999 to 2003, New South Wales



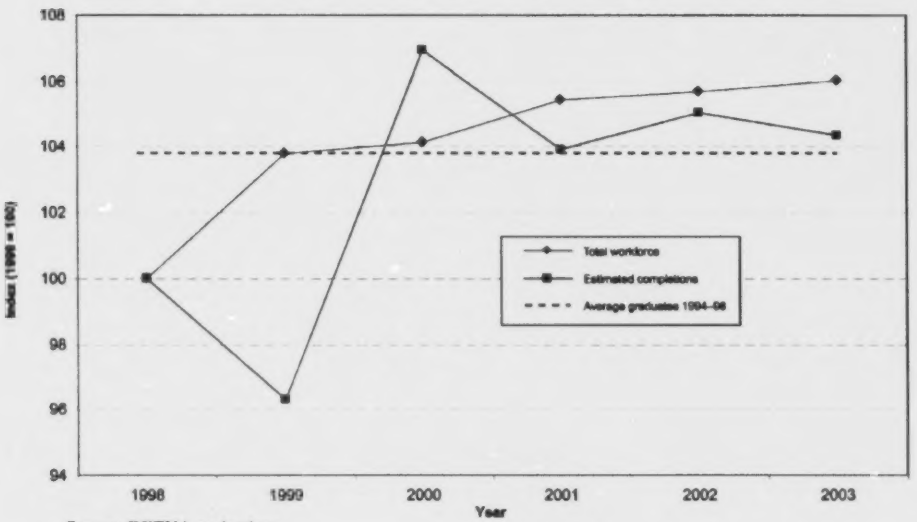
Source: DETYA projections.

Victoria

Student enrolments in Victoria are expected to increase by less than the national average, with an actual fall expected in the primary sector. As in New South Wales, the increase in the secondary sector will be greater in the non-government sector. Despite these low student enrolment growths, teacher employment is projected to be 6 per cent higher in 2003 than in 1998, due primarily to changes in the government policy on teachers in government schools (see Chart 21).

The number of graduates is projected to be, on average, similar to that in the recent past (see Chart 21). In the context of an increasing workforce, though, this means that the training rate would fall (from 4.2 per cent to 3.9 per cent).

Chart 21: Projected teacher workforce and new graduates, 1999 to 2003, Victoria



Source: DETYA projections.

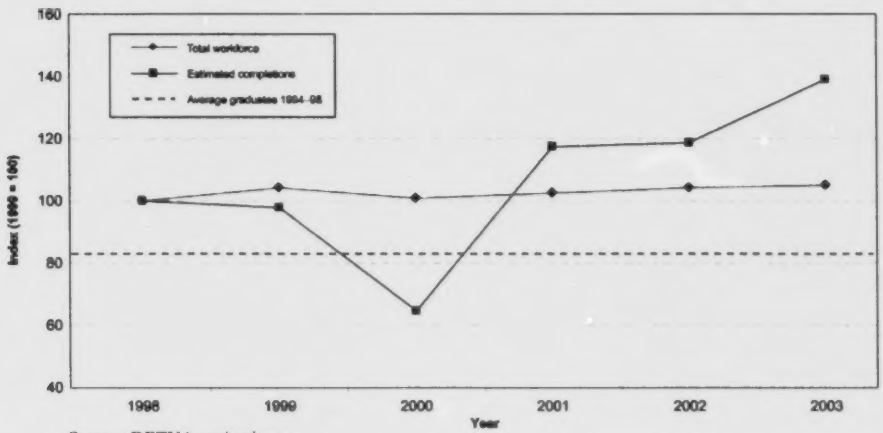
Queensland

In the 1998 to 2003 period Queensland is projected to have the highest growth in student enrolments among the States and Territories (5.1 per cent), just over three times the national average. As for the other States, the growth will be greater for the secondary sector but, unlike other States where primary enrolments are static or declining, primary sector enrolments in Queensland are projected to also increase by a relatively significant amount (4.5 per cent).

In line with these enrolment projections, the teacher workforce in Queensland should grow by around 6 per cent from 1998 to 2003 (Chart 22). While higher than for other States and Territories, a growth of this magnitude is less than half the growth that was achieved in Queensland in the decade to 1999.

Graduates from initial teacher courses are projected to be substantially above the numbers of the recent past (see Chart 22). In the latter part of the projection period graduate levels should be over 50 per cent higher than in the second half of the 1990s. On this basis, the training rate is projected to jump from 4.7 per cent to 5.7 per cent.

Chart 22: Projected teacher workforce and new graduates, 1999 to 2003, Queensland



Source: DETYA projections.

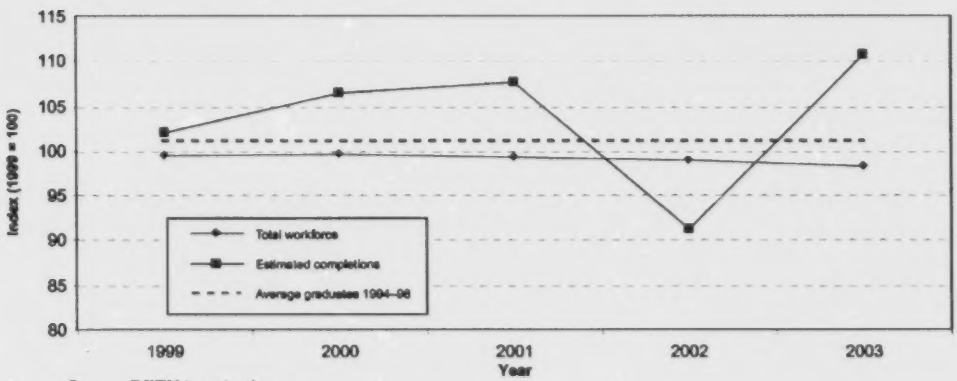
South Australia

Student enrolments in South Australia have been rising slowly since 1996 and have only recently regained the peak reached in 1994. However, in the period to 2003 falls are projected for both the primary and secondary sectors, but this will be felt exclusively in the government sector. The non-government sector is projected to grow slightly, particularly at the secondary level.

In line with the declining enrolment trends, teacher numbers are also projected to fall by around 2 per cent over the projection period (Chart 23). This will continue the steady decline in teacher numbers in South Australia since before the start of the 1990s, which was interrupted by the period of slight growth in the second half of the 1990s.

Teacher graduations in South Australia are expected to remain on average much the same as in the pre-projection period (Chart 23), although due to the fall in commencements in 1998, a decline in graduates is expected in 2002. Accordingly, the training rate is also estimated to remain unchanged at 3.2 per cent. This training rate is the lowest of all the States and Territories, except for the Northern Territory, reflecting the more static teacher labour market in South Australia.

Chart 23: Projected teacher workforce and new graduates, 1999 to 2003, South Australia



Source: DETYA projections.

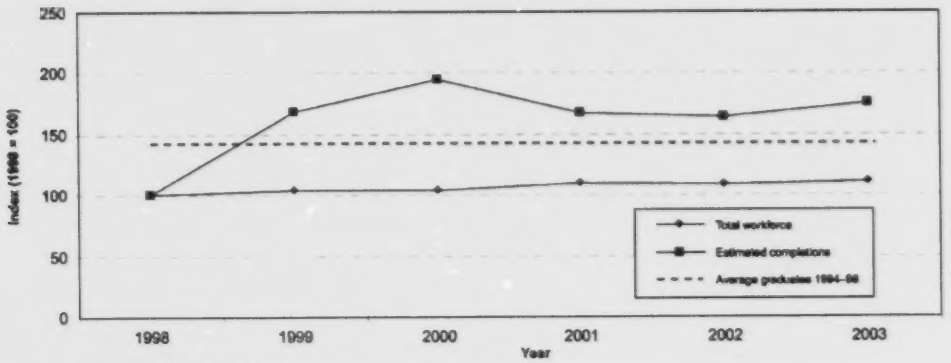
Western Australia

Student enrolments in Western Australia are projected to continue growing at above the national average, at both the primary and secondary level, but at a slower pace than in the second half of the 1990s. Most of this growth will be confined to the non-government sector. The government sector is projected to remain roughly stable, with some gains in the primary sector and falls in the secondary.

Teacher numbers are projected to increase relatively strongly in Western Australia (see Chart 24) and somewhat faster than in the other States. This is consistent with the rapid growth in teacher numbers for the whole of the 1990s. In the projection period, most of the increase in teacher numbers is projected to occur in the government primary sector.

Graduate numbers are estimated to be, on average, well above the level of recent years (Chart 24). This is estimated to push the training rate in Western Australia from 4.5 per cent in the second half of the 1990s to 5.0 per cent in the early 2000s.

Chart 24: Projected teacher workforce and new graduates, 1999 to 2003, Western Australia



Source: DETYA projections.

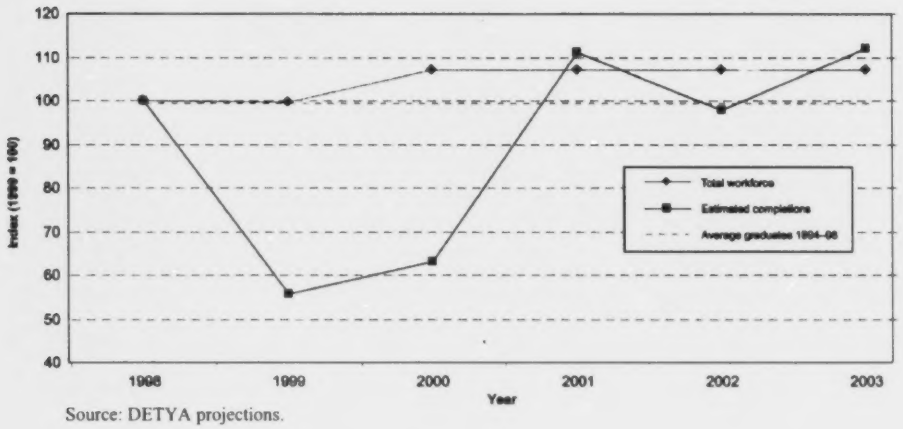
Tasmania

Student numbers in Tasmanian primary schools have been declining steadily through most of the 1990s, while remaining roughly stable in the secondary sector. The decline in the primary sector is expected to continue for at least the next few years, but secondary numbers are projected to remain stable.

Teacher numbers are projected to remain unchanged as a whole (Chart 25), with only small falls in the secondary sector.

Graduate numbers are projected to be somewhat lower over the early part of the projection period than in the second half of the 1990s, but to pick up in the latter part (Chart 25). On average, however, graduate numbers are projected to be below those in the five year period to 1998. The training rate is therefore estimated to fall from 4.6 per cent in the second half of the 1990s to 3.8 per cent in the projection period.

Chart 25: Projected teacher workforce and new graduates, 1999 to 2003, Tasmania



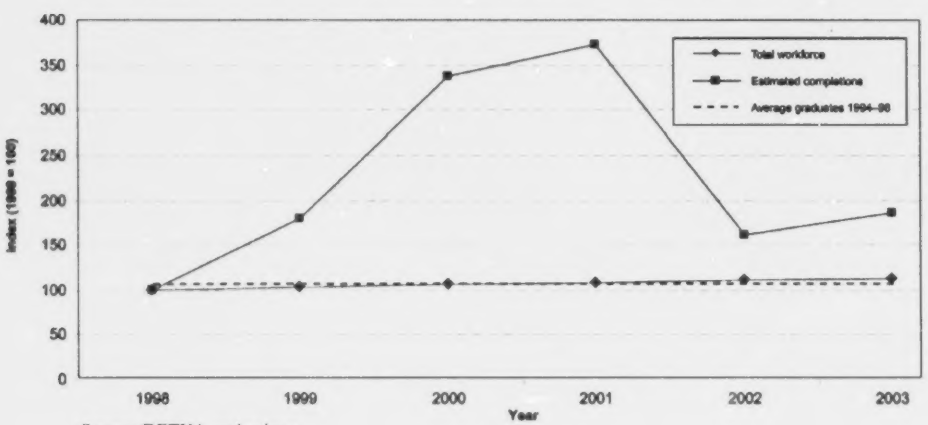
Source: DETYA projections.

Northern Territory

In recent years, student numbers in the Northern Territory have been rising but at a gradually slower rate. In the projection period to 2003, student numbers are projected to remain roughly stable, with falls in the primary sector being offset by increases in the secondary sector.

Teacher numbers are projected to grow strongly (Chart 26), much as occurred during the 1990s, due to expected improvements in the STR. Graduates from initial teacher education courses have been low in the Northern Territory but there has been a strong rise in commencements in the last few years. This is projected to lead to a substantial increase in teacher completions in the projection period (Chart 26). The training rate accordingly is expected to increase from 2.3 per cent to 5.3 per cent. It needs to be noted that this would be from a relatively small base, which makes projections less reliable.

Chart 26: Projected teacher workforce and new graduates, 1999 to 2003, Northern Territory



Source: DETYA projections.

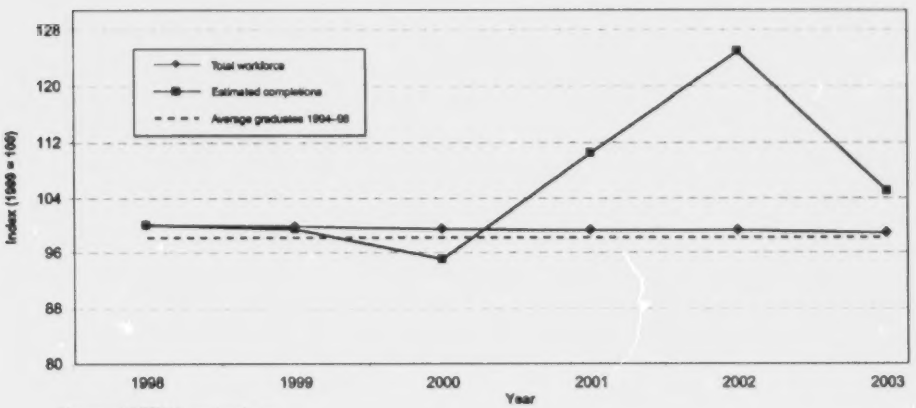
Australian Capital Territory

Student numbers in the Australian Capital Territory have declined marginally since the early 1990s, in both the primary and secondary sectors. There was a slight rally in the mid 1990s but since then there has been a downward trend. This trend is expected to continue into the projection period, with student numbers falling in both sectors. Apart from Tasmania, the Australian Capital Territory is projected to experience the greatest percentage fall in student numbers.

In line with the projected fall in enrolments, teacher numbers are also estimated to fall (Chart 26). This follows a period of relative stability in teacher numbers in the Australian Capital Territory.

Graduate numbers in the Australian Capital Territory have been broadly on an upward trend in the 1990s. This is projected to continue, with average graduations in the projection period exceeding those of the pre-projection five year period (Chart 27). As a result, the training rate is estimated to increase from 5.7 per cent to 6.2 per cent. This is the highest in Australia, reinforcing the fact that the Australian Capital Territory has been a net exporter of teachers to other States and Territories.

Chart 27: Projected teacher workforce and new graduates, 1999 to 2003, Australian Capital Territory



Source: DETYA projections.

In summary, the main trends projected for the States and Territories are:

- Student numbers in total to decline in four States and Territories, namely South Australia, Tasmania, Northern Territory (marginally) and the Australian Capital Territory, and increase in the others. The strongest increase is projected for Queensland and the strongest decline for South Australia. All States and Territories, except for New South Wales, Queensland and Western Australia, are projected to experience a decline in primary students, with the situation for secondary students being more mixed;
- Partly reflecting these enrolment trends, total teacher requirements across the primary and secondary sectors are projected to increase in all States and Territories except South Australia and the Australian Capital Territory, with employment in Tasmania remaining unchanged. Most of the rise in requirements will be in the secondary school sector;
- The level of graduations, averaged over the five projection years, is projected to be higher than in the corresponding five year period prior to 1999 (the start of the projection period) for four of the States and Territories and stable for another. Declines are projected for the remaining three States and Territories (New South Wales, Victoria and Tasmania), although in these States the trend is upwards in the final years of the projection period. The highest training rates are projected to be in the Australian

Capital Territory, Queensland, the Northern Territory (but from a low and variable base) and Western Australia.

Flexibilities and scope for adjustment in the teacher labour market

While it has been possible using the available information to make an assessment of the extent to which projected graduations in the next few years may be adequate to meet the need for new teachers in the Australian teacher labour market as a whole, appropriate data to make a similar assessment at the State and Territory level are not available. In particular, there is no information at the State/Territory level on net replacement rates, which are essential for making an informed assessment of the loss of teachers to the teaching profession within a State. These rates can be expected to vary significantly across the various jurisdictions, reflecting differences in operation of the teacher labour markets across the States and Territories and differences in opportunities available for people with teacher qualifications in the broader local and State labour markets.

However, even if it were found that in one State or Territory the training rate is insufficient by itself to provide enough new graduates to ensure that the State teacher labour market remains in balance, this does not mean that the State or Territory will automatically experience shortages of teachers. There are a number of sources of flexibility in the system which enable the State and Territory teacher labour market to adjust to some extent to potential imbalances between supply and demand. These sources are essentially of two kinds:

- options available to management within a single jurisdiction, such as the State education system. These can be classed as essentially 'internal flexibilities'.
- some adjustments are possible by way of movements across jurisdictions. For instance, teachers can move from the government education system to the non-government system in the same State, and vice versa; or they can move from one State or Territory to another. These adjustments provide options for 'external flexibility'.

This section discusses briefly some of these sources of flexibility.

Adjustments within a jurisdiction (internal flexibilities)

If there is an unexpected surge in demand for teachers within the jurisdiction, or a shortfall develops, which cannot be met through additional recruitment of staff because of a general shortage of teachers in the labour market, managers within the education authorities have a number of options at their disposal for dealing with the problem. These could include:

- allowing the STRs to rise by a small amount. A rise in the STR by one half of a percentage point in the secondary sector in any one jurisdiction is equivalent to reducing demand for teachers by about four per cent, which is slightly less than the annual output of teaching graduates in that jurisdiction;
- delaying the granting of long service leave and other leave arrangements to retain existing teachers longer;
- providing more hours of work to those currently working part-time (on a permanent or casual basis) and extending the term of appointment to fixed term contract teachers;
- making greater use of the pool of relief teachers and those registered for vacancies in teaching; and
- re-allocating teaching tasks to make the best use of available teachers, especially if the demand/shortage is for particular types of skills (e.g. mathematics or languages other than English).

A number of these measures have been used successfully in Australia in the past in the context of overcoming recruitment difficulties. Some of these have already been reported by the States and Territories in Chapter 3.

Adjustments through teacher movements between jurisdictions (external flexibilities)

Education jurisdictions and State labour markets do not operate in isolation. There is a significant movement of teachers between jurisdictions within a State and, importantly, between States. This provides an important source of flexibility in the labour market. The extent of these movements is discussed below.

Movement of teachers between jurisdictions within the same State/Territory

Data on movement of teachers between jurisdictions is not available, although it is known to be an important way by which teachers gain promotions and schools expand in areas of need. Some indication of the extent of this can be gleaned from the data on separations from the government school sector nationally and comparing this to the net replacement rate. An important source for the difference between these two measures (of the order of 1-2 percentage points) is likely to be the net flow of teachers out of the government sector into the non-government sector, which has been growing faster than the government sector.

Interstate movements of teachers

Interstate movements can be an important source of flexibility in the teacher labour markets, with surplus teachers from one State or Territory helping to overcome shortages in other jurisdictions. Table 14 provides an indication of the flow of new teacher graduates across State borders to gain employment. The data is based on the Graduate Destination survey undertaken by the Graduate Careers Council of Australia of 1998 graduates. These data relate to new teaching graduates who obtained a job in teaching by the time of the survey (April 1999).

The first point to note is that around 8.4 per cent of graduates in Australia who found employment soon after graduation moved from the State where they obtained their qualification. The proportion varied from almost two thirds in the Australian Capital Territory to less than 3 per cent in Queensland. There was some movement out of the State even in those States which were net gainers of graduates, like the Northern Territory and Tasmania. This is quite normal in the labour market for graduates as they seek out the best opportunities in the labour market.

In the case of New South Wales, South Australia and the Australian Capital Territory, during 1999 a greater number of new teaching graduates left the State to take up a teaching position than came into the State for the same reason. These States could be considered to have been net exporters of new teacher graduates during 1999.

Most of the New South Wales graduates who leave the State go to Queensland. South Australian graduates to the Northern Territory and Victoria; and ACT graduates go to New South Wales.

The States which are net importers of new graduate teachers are the Northern Territory and Queensland and, to a lesser extent, Tasmania. The Northern Territory obtains new graduate teachers from New South Wales, Victoria and South Australia. The main contributor to the Queensland teacher market is New South Wales.

It must be emphasised that this relates only to the movement of new teaching graduates. Graduates of previous years and currently employed teachers are not included in the Graduate Destination Survey. (To illustrate this, in the case of New South Wales a number of interstate teachers and interstate teaching graduates of previous years apply for employment with the Department of Education and Training each year.)

Table 14: Employed graduate teachers – State of graduation and State of employment (1999)

	Proportion of the State's employed teacher graduates who obtained a job in the State (per cent)	Proportion of teacher graduates employed in the State who came from outside the State (per cent)	Ratio of State teacher graduates to State employment of teacher graduates
NSW	88.2	5.3	1.11
VIC	93.1	7.5	0.99
QLD	97.7	8.4	0.94
WA	95.8	6.1	0.98
SA	78.7	4.1	1.22
TAS	93.2	16.7	0.89
NT	83.3	66.7	0.40
ACT	34.8	46.7	1.53
Australia	***91.6***	***8.4***	***1.00***

Source: GCCA (1999), unpublished data.

Note: Numbers for Tasmania, Australian Capital Territory and the Northern Territory are small and need to be treated with caution.

This analysis seems to indicate that new teacher graduates are geographically mobile, to the extent that nationally around 8 per cent of them change State to get a teaching job. This provides a useful degree of flexibility in the labour market for teachers and can be important in balancing demand and supply across States.

Once graduates obtain a job, their mobility declines. Data from the 1996 census, for instance, show that over a five year period perhaps three to four per cent of all employed teachers moved interstate, but this varied from one State and Territory to another. The pattern of net gains and losses reflects the movements of new graduates discussed above, the main exception being Victoria. In the five years to 1996 Victoria seems to have been a net exporter of teachers, while in terms of recent graduates it is neither a net gainer nor a net loser (Table 15).

Table 15: Interstate movements between 1991 and 1996 of employed teachers as a proportion of employed teachers in each State and Territory (per cent)

Movement	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
INTO STATE								
Primary teachers	2.7	1.6	4.7	2.2	2.4	4.8	35.7	15.4
Secondary teachers	2.6	1.6	5.6	2.6	3.1	5.4	51.6	17.9
OUT OF STATE								
Primary teachers	2.6	3.2	2.5	4.0	2.2	5.0	21.8	17.8
Secondary teachers	2.5	3.4	2.8	5.8	2.3	4.9	26.0	17.1

Source: ABS Census of Population and Housing, 1996 (data reported in MCEETYA 1998).

Summary

The time span between 1998 and 2003 is expected to be characterised by two distinct periods. During the first, covering the period to 2001, enrolments in both primary and secondary schools are projected to grow at a fairly steady rate. As a result, teacher requirements are also expected to continue rising. In the second

period, between 2001 and 2003, enrolments in the primary sector are expected to flatten out while those in the secondary sector are projected to continue growing but at a slower pace. Teacher requirements are expected to follow suit.

The slow growth in teacher requirements in the four years to 2003 is therefore expected to generate the need for under 1500 additional recruits a year. The biggest component of recruitment needs, summed over the government and non-government sectors, will arise from the need to replace retiring teachers and teachers who resign, some of them to go to another jurisdiction. On average, this is estimated to come to around 11 000 teachers a year in this period. Other sources through which teachers leave the teaching workforce, such as long term leave, roughly balance out with the number of teachers returning from long term leave.

This estimate of retirements and resignations overstates the loss of teachers from the teaching profession as some resignations involve leaving one teaching jurisdiction to go to another rather than exit from teaching. A better measure of the loss of teachers is the "net replacement rate" calculated by researchers at Monash University, although this tends to understate the teacher loss somewhat. The net replacement rate has been estimated at roughly 3 per cent of the teaching workforce or 7000 teachers a year in the period to 2003.

Ignoring any surplus teachers available to take up positions in teaching when these become available, balance in the labour market requires that new graduates equal the teacher loss rate plus growth in requirements. On this basis, there is a need for at least 8500 new graduates a year (1500 growth plus 7000 loss). This compares with a projected level of teaching graduates available for teaching of the order of 9000 a year in the four years to 2003, suggesting that at the national level graduations should be broadly adequate to meet requirements over that time period. In addition, there is a buffer of teaching resources available in most States in the pools of relief, casual and other teachers currently under-employed (or not employed at all) in teaching.

It has not been possible to undertake a similar analysis for each of the States and Territories because of data limitations. However, even if an analysis of this kind were to indicate that graduations from a particular State or Territory came in under the level required to maintain balance in the labour market, some under-production of graduates can be maintained for a period if there is already a pool of surplus or under-employed teachers. This is the case at the moment in a number of States and Territories. Furthermore, interstate migration of new graduates provides a further source of flexibility to even out supply and demand.

Looking at projected trends in student numbers, teacher employment and graduation within the States and Territories shows significant expected variations across Australia. Student numbers are projected to decline in four States and Territories and increase in the others. The strongest increase is projected for Queensland, followed by Western Australia, and the strongest decline for Tasmania. Teacher requirements across the primary and secondary sectors are projected to increase in all of the States and Territories, with increasing student numbers as well as two of the States and Territories with declining student numbers (i.e. Tasmania and the Northern Territory). Most of the rise in teacher requirements is projected to occur in the secondary school sector.

While nationally graduations are on the rise in the period to 2003, some States and Territories are expected to experience declines. The average training rate (i.e. the ratio of graduations to the teacher workforce) over the period 1998 to 2003 is projected to increase in Queensland, Western Australia, the Northern Territory and the Australian Capital Territory and remain unchanged in South Australia. In part this reflects differential rates of growth in enrolments between the States and Territories noting, for example, that Queensland and Western Australia are the two States with the fastest growing student populations. However, other State-based factors are also at play in other jurisdictions.

Chapter 8

Longer term pressures on the teacher labour market

The period post 2003 has not been examined in detail in this report. However, there are signs of emerging pressures that appear likely to come to bear on the teacher labour market in the next five to ten years. This chapter discusses three factors that are likely to be important influences on the supply and demand of teachers in the current decade.

Future student enrolment trends

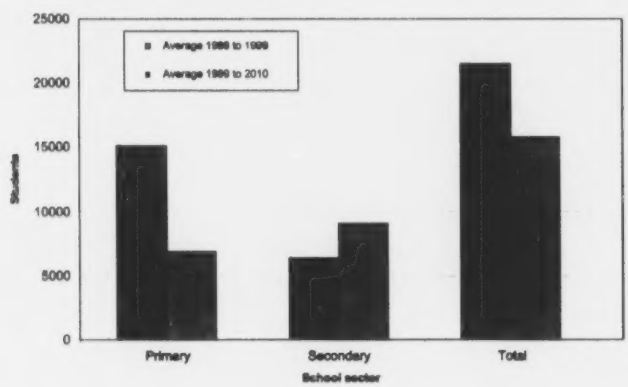
DETYA prepares student enrolment projections regularly. These are based on two sources of information:

- projections of population by age prepared by the ABS and reported in *Projections of the population of Australia, States and Territories* (Cat. No. 3222.0). ABS projections take into account a variety of factors in making their projections, including trends in fertility and migration patterns; and
- projections of the grade progression ratio (GPR) developed by DETYA using data on school enrolments by age and grade in the ABS publication *Schools, Australia* (Cat. No. 4221.0).

GPR's at the later years of schooling, beyond the compulsory school age, are of course subject to some degree of uncertainty as they are affected by a number of social and economic factors, including the state of the labour market. In preparing the enrolment projections to 2010, DETYA has assumed that the GPR's will remain constant at the 1999 level (latest estimate available).

According to these DETYA enrolment projections, the growth in student enrolments is expected to slow down at the national level in the next decade, reflecting trends in the number of children of school age in the population. In particular, the average annual increase in students for the period between 1999 and 2010 is projected to be under 16 000 a year (which equals 0.5 per cent of the student population) compared to 21 500 (or 0.7 per cent of the student population) in the period between 1989 and 1999. The decreased growth is expected to occur in the primary sector with growth in the secondary sector actually picking up on the trend in the last ten years, but not by enough to offset the decrease in the primary sector. This is illustrated in Chart 28.

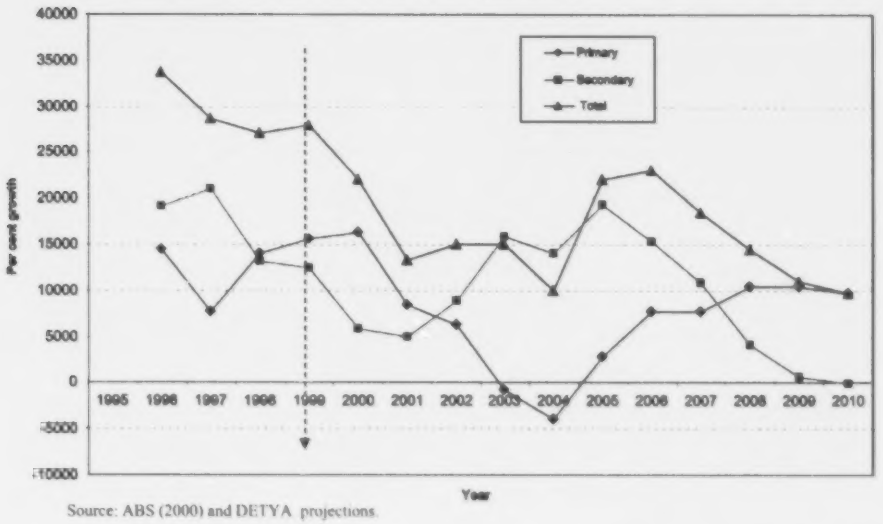
Chart 28:Average annual increase in enrolments 1989–1999 (actual), and 1999–2010 (projected)



Source: DETYA projections

Chart 28 shows projected annual growth in student numbers to 2010. Ignoring the year to year variations which are due to volatility in the data, the current falling trend in additional annual enrolments is projected to bottom out around 2001. Following a period of stable but low annual increases to 2004, enrolments are then projected to rise again for a few years, before another decline in the last few years of the current decade. The peaks and troughs for both the primary and secondary sectors are not expected to be in phase during most of the forecast period, as shown in Chart 29.

Chart 29: Annual enrolment increases 1995 to 2010



Source: ABS (2000) and DETYA projections.

These figures suggest that enrolment increases of themselves will be creating less demand for additional teachers in the current decade than they did in the last decade of the 1990s. However, there is expected to be a significant shift in the composition of the additional teacher requirements, away from primary and towards secondary school teachers. For instance, in the past decade 70 per cent of additional enrolments were in the primary sector, but this is expected to fall to around 40 per cent in the current decade. These trends will need to be reflected in future commencements and graduations from initial teacher training courses. At the same time, however, these effects are expected to be less important than those due to the ageing of the teaching workforce, as discussed below.

The implications of baby boomers approaching retirement

The ageing of the teaching workforce and its potential implications for policy makers was first raised in the last MCEETYA report on the supply and demand for teachers. Since that time some further information and analysis have become available, which are discussed in this section.

Ageing of the teaching workforce

The DETYA 2000 survey sought details of the age distribution of the teaching workforce in each State and Territory, to provide a picture of the age distribution of the current workforce nationally. The age distribution of the government teaching workforce in 1999 is shown in Chart 30 and Chart 31 for primary and secondary teachers respectively.

Chart 30: Age distribution of primary school teachers, 1999

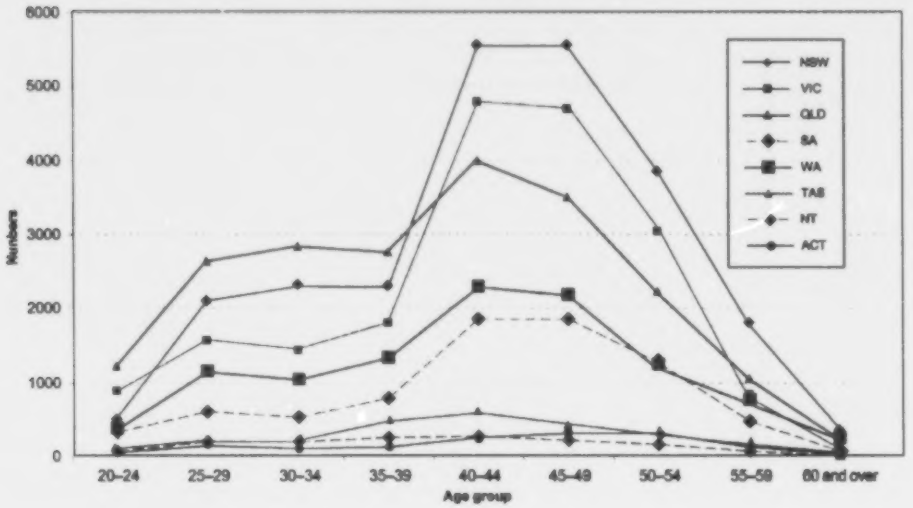
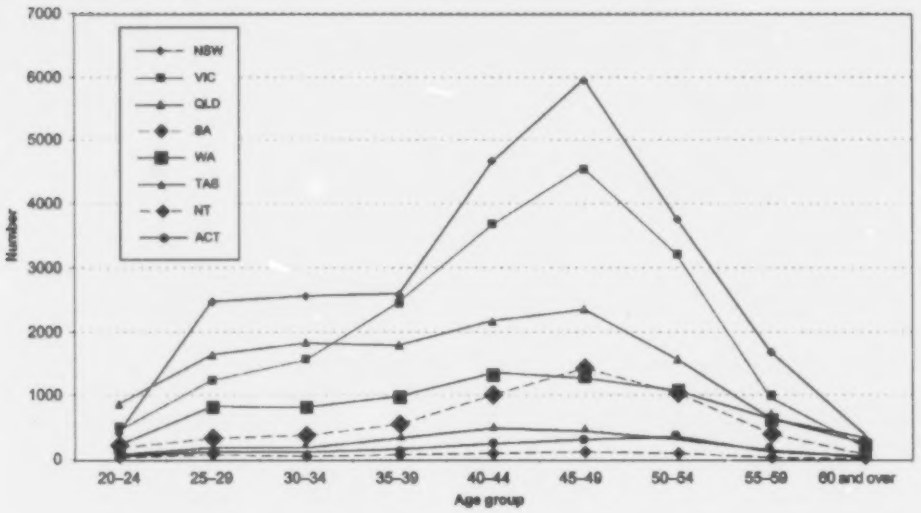


Chart 31: Age distribution of secondary school teachers, 1999



Source: DETYA (2000, b).

The charts suggest a high degree of uniformity across States in the age structure of the teaching workforce. More importantly, Table 17 shows that in the government sector, at both the primary and secondary levels, over 20 per cent of teachers are aged 50 years and over and around 45 per cent are aged 45 years and over. In some States and Territories, notably the Australian Capital Territory and South Australia (for secondary teachers) these proportions are much higher.

Table 16: Percentage of teachers in government schools aged 45 and over and 50 and over, 1999

	Government primary		Government secondary	
	45 and over	50 and over	45 and over	50 and over
NSW	47.5	24.6	48.0	23.6
VIC	45.4	20.9	48.9	23.6
QLD	40.4	17.4	36.7	18.8
SA	47.1	23.4	54.6	27.7
WA	41.8	21.4	43.6	26.0
TAS	36.9	19.9	42.5	21.7
NT	32.0	17.2	44.7	22.0
ACT	53.6	31.8	55.6	34.7
Australia	***42.8***	***21.5***	***45.7***	***23.4***

Source: DETYA (2000, b)

Teachers aged 50 years and over in 1999 should be eligible to retire by 2004 when those aged 50 years in 1999 will be turning 55 years. Those aged 45 years and over should be eligible to retire by 2009. If they were to retire at around the age of 55 years, the teacher separation rate would go up substantially from the current level. For example:

- spreading the retirement of those aged 50 years and over the five years to 2004 would indicate a loss rate due to retirements of around 4 per cent a year in the next few years;
- spreading the retirement of those aged 45 to 49 years over the five years between 2005 and 2009 when they would be entitled to retire would suggest a loss rate due to retirements of around 5 per cent a year during that period.

These loss rates due to retirements are much higher than those experienced in recent years, when they have been of the order of 2 percentage points a year in the government sector. However, the extent to which teachers in government schools retire from teaching on reaching the age of 55 years is not entirely clear.

Data from the State and Territory education authorities indicate that around 7-8 per cent of teachers in the government sector were over the age of 55 years in 1999 so that staying on past the age of 55 years is not uncommon. Furthermore, results from the DETYA 2000 survey showed that, for those States that were able to respond to the question pertaining to current retirement age, most teachers retire between the ages of 55-59 years. On the other hand, one State was able to provide data showing that, in their jurisdiction, there was a large exit just before the age of 55 years, due to incentives inherent in the superannuation system. Some of these were then apparently re-employed as contract teachers soon after their formal retirement.

If teachers' retirement occurs over the ages 55 to 60 years or later, rather than at 55 years, then the retirement of the cohort of prospective retirees identified above would be spread over a longer time span, say 15 years rather than 10 years, so that the annual loss of teachers would be smaller than calculated above. This would give the teacher labour market more time to train up the additional teachers needed to replace those retiring. Nevertheless, on the basis of the available evidence, it is clear that retirements as a proportion of the teaching workforce will rise in the current decade and that this will increase the pressure on the teacher labour market. This pressure is expected to be greater in the second half of the decade than in the first.

State and Territory retirement trends

The State and Territory education authorities have also been examining the implications of the ageing of their teaching workforces for the separation rate. The information provided by the State and Territory education authorities is summarised in Chart 32 and Chart 33.

Chart 32: Annual retirements in the government primary school sector as a percentage of the permanent government primary teaching workforce (head count), 1996 to 2004.

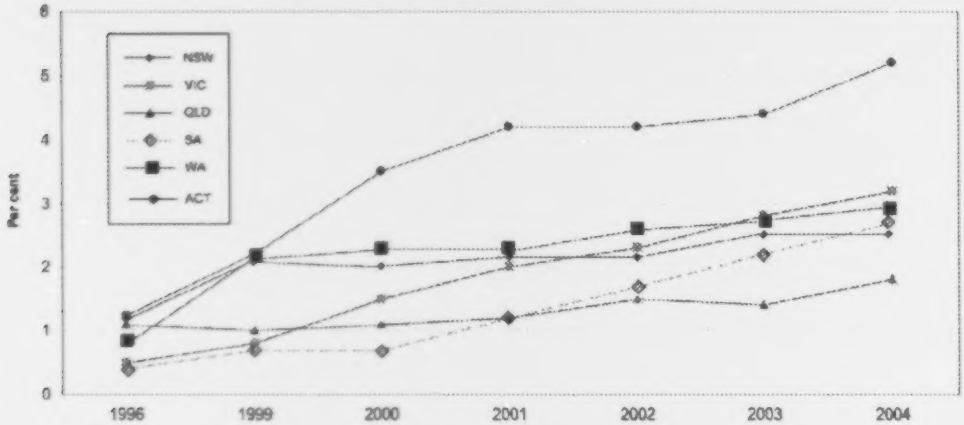
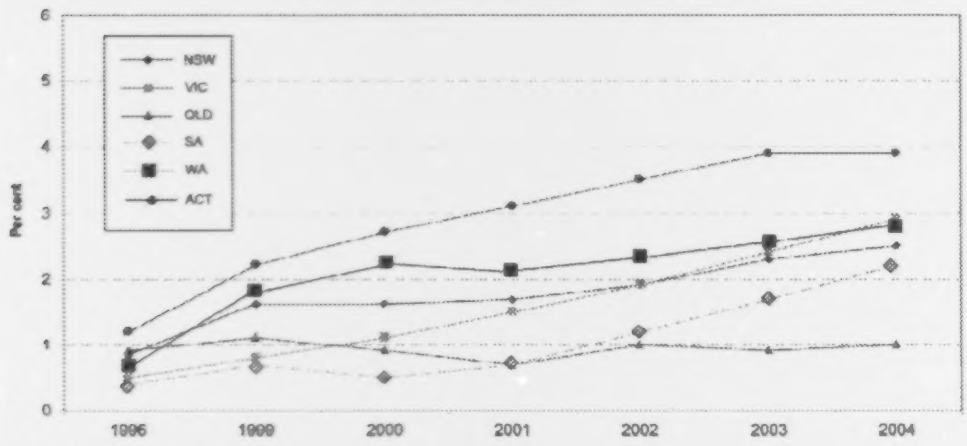


Chart 33: Annual retirements in the government secondary school sector as a percentage of the permanent government secondary teaching workforce 1996 to 2004.



Source : DETYA (2000, b).

The charts show that the States and Territories are factoring in higher retirement rates in the period to 2003 or 2004. In most States and Territories, the retirement rates are expected to be around 2 percentage points higher in 2004 than in 1996. Importantly, the retirement rate in these charts at the end of the projection period is shown as still rising.

Two of the States and Territories (Western Australia and Queensland) have published quite detailed reports on this issue in recent years. The Education Department of Western Australia (2000) report focussed exclusively on the issue of the ageing of the teachers workforce. It found that age retirement had grown so

that in 2000 it represented about one third of overall separations and that this proportion appeared to be on the increase. Projections of retirements indicate that the over 55 group could more than double over the period 2000 to 2010.

The Education Queensland (2000) report expected retirement levels to double between 1999 and 2009. This would mean that retirements which were less than 1 per cent a year in the late 1990s could rise to more than 2 per cent a year per annum by 2009.

Summary on the implications of the ageing of the teacher workforce

On the basis of the available evidence and research, it is clear that retirements as a proportion of the teaching workforce will rise in the current decade and that this will increase the pressure on the teacher labour market. Some impact is likely to be felt in the early years of the current decade but the impact is projected to be greater in the second half of the decade than in the first. As there is some uncertainty about the precise pattern of future retirements, it will be important for the States and Territories to monitor developments, including retirement intentions of teachers. There may be also be some scope to provide incentives to defer retirements.

Shortage of mathematics and science teachers

Every State and Territory education authority has indicated that it is experiencing difficulties in recruiting science and mathematics teachers, more so than for other disciplines. This section explores the likely future outlook for this group of teachers, based on currently available evidence.

Characteristics of mathematics and science teachers in secondary schools

Teachers whose principal teaching area was mathematics comprised around 16 per cent of all secondary school teachers in the Australian Council of Education 1989 survey (see Logan et al 1990). As a point of comparison, English teachers accounted for just under 16 per cent of the secondary teaching workforce. By contrast, using the same definition, teachers of physical and earth sciences accounted for just over 7 per cent of all teachers.

There is a fair degree of overlap between mathematics and science teaching. The Third International Mathematics and Science Study (TIMSS) conducted in 1994 indicated that around a third of mathematics teachers also taught science (Lokan et al 1996). However the degree of overlap was lower for teachers who taught in the later years of high school compared to those who taught Years 7 and 8, suggesting that teachers tend to be more specialised at the senior secondary school levels. However, in general both mathematics and science teachers cover a range of year levels in their teaching.

Information from TIMSS showed that mathematics and science teachers had, on average, 15 years of teaching experience and most commonly around 20 years of experience. This largely reflects the age structure of the teaching workforce. In the intervening years this structure has progressively moved further towards the older age groups, so that the most recent survey of teachers in Australia is likely to show that the average age of mathematics and science teachers has increased.

There is limited information on the precise qualifications held by mathematics and science teachers although the 1999 ACE survey collected information on the qualifications of Year 12 teachers in a broad range of disciplines (Dempster et al 2000). Among mathematics teachers, around 70.3 per cent had a degree with a major in mathematics (compared to 82.7 per cent for English, for example). A further 25.7 per cent had some university mathematics but less than a full major. However, around 4.0 per cent had only Year 12 mathematics or no formal study in mathematics. For physical or earth science teachers, nearly 80 per cent had a degree with a major in those areas of science in which they were principally engaged, and only 1.4 per cent had only Year 12 science. Much as in the case of mathematics, around 18.7 per cent had

some university training in the physical and earth sciences but not a full major.
The proportion with only Year 12 qualifications in all science areas was low (less than 3 per cent).

To put these results into perspective, it needs to be noted that the proportion of those with only Year 12 qualifications in the subject they taught was generally low in all disciplines, while the proportion with at least a major in the discipline they taught varied. It was highest in the humanities (89 per cent) and over 70 per cent in most of the traditional disciplines. However, it was relatively low in some of the new areas, such as information technology (47.1 per cent). It needs to be recognised, however, that there is currently no set and agreed national qualifications for teachers by discipline.

The qualification level of teachers in each discipline appears to have increased significantly in the ten year period between 1989 to 1999. According to ACE data, the proportion of mathematics teachers with at least a major in mathematics rose by 10 percentage points. The increase for the physical and earth sciences during the same period was nearly 30 percentage points. The size of these improvements may be due to data inconsistency or they may reflect a much greater emphasis within schools on ensuring that highly qualified teachers are assigned to Year 12 classes.

The recent supply of mathematics and science graduate teachers

There are two main paths to mathematics and science teaching: undertaking an initial teacher training course with some mathematics and science subjects included; or completion of a science or arts degree, which includes science and mathematics subjects, followed by a postgraduate diploma in teaching. Higher education statistics collected by DETYA provide information by which it is possible to derive the total number of teachers graduating each year in these two categories but not the discipline that they are qualified to teach in. This prevents the assessment of trends in the number of mathematics and science teachers graduating each year.

In order to obtain an indication of these trends, DETYA extracted information on the number of first year students in secondary teaching courses who took mathematics and science subjects in their first year's load. This was considered to provide a useful estimate of the number of students who, during their teaching course, may major in mathematics and the sciences. The data for the period 1992 to 1999 are shown in Table 17.

Table 17: Students in the first year of secondary teaching courses studying selected subjects, 1992 to 1999

	1992	1993	1994	1995	1996	1997	1998	1999
Sciences	2 631	2 229	1 621	1 545	2 093	2 020	1 484	1 560
Physical sciences	533	392	194	136	236	219	147	137
Chemical sciences	523	470	363	243	360	312	174	192
Mathematics and computing	1 708	1 622	1 290	1 054	1 607	1 462	1 030	1 045
Mathematics	892	803	603	416	368	416	400	390
Computing	816	819	687	638	1 239	1 046	630	655
Humanities	2 819	3 046	3 054	2 996	2 533	3 343	3 095	3 108
Total	***6 193***	***6 063***	***5 771***	***5 858***	***5 972***	***7 065***	***6 447***	***6 105***

Source: DETYA (2000, c).

Table 17 shows that in the 7 year period between 1992 and 1999 the total number of students in secondary teaching courses remained more or less the same. In some subjects, like the humanities, student numbers also stayed at a fairly constant level. However, the situation was quite different for both mathematics and science.

The number of teaching students who studied science fell both in absolute terms and as a proportion of all teaching students. The falls were particularly marked for the physical and chemical sciences, where the number of students more than halved during this time. A similar trend is evident for students in the mathematical sciences and, to a lesser extent, in computing although trends in the latter are masked by unusually high figures for 1996 and 1997 which might reflect data recording problems rather than actual increases in student numbers. Assuming that the number of graduates who followed the second path into teaching exhibited the same trend, these data suggest that the number of new science and mathematics teachers may have been declining significantly during the 1990s. Similar findings were reported in Dobson and Calderon (1999).

Factors likely to affect the supply of mathematics and science teachers

A number of factors have been advanced in the literature for these results:

- a decline in interest among secondary and university students in mathematics and science;
- negative attitudes to teaching among mathematics and science teachers;
- greater opportunities in other fields among those with good mathematics and science abilities.

These factors are discussed briefly below.

Decline in interest among secondary and university students in mathematics and science

The report *Subject choice by students in Year 12 in Australian Secondary Schools* (Fullarton and Ainley 2000) indicates that in 1998 around 87.5 per cent of all Year 12 students studied mathematics and around 60 per cent studied some science. Expressed as a percentage of all subject enrolments, mathematics represented 17.7 per cent of all full-time equivalent subject enrolments (slightly down from 17.9 per cent five years earlier); and science represented 15.2 per cent, down from 17.2 per cent five years earlier.

This suggests that there has been little change in participation in mathematics at senior secondary level in the 1990s. However, Thomas (2000) indicates that this masks the fact that the majority of Year 12 students are taking low and intermediate level mathematics, and the number and proportion studying high level mathematics has been declining steadily since at least 1990. By 1999 the number taking high level mathematics had fallen from the 1990 number by about one quarter. On the surface this may suggest a decline in interest in advanced mathematics, which is likely to be the level of mathematics expected of those taking courses in science and in teaching with a mathematical bent.

The number of students at university level taking mathematics and science also provides interesting insights into student preferences (Table 18). While the number of students commencing a science degree increased significantly (over 50 per cent) in the ten years between 1989 and 1999, this was due almost entirely to strong increases in computing science, the life sciences and general science. The physical sciences (mainly physics and chemistry) have risen marginally, while mathematics fell by around 15 per cent. Once the volatility in the numbers is taken out, commencements in both the physical sciences and mathematics appear to have remained fairly stable. In proportional terms, as a ratio of all science commencements or total commencements, both physical sciences and mathematics have, however, declined.

Table 18: Commencing non-overseas students in science courses by discipline, 1989 to 1999

	1989	1994	1999
Computer science	6 125	7 218	12 686
Life sciences	6 150	8 242	10 345
Mathematics	1 344	1 438	1 138
Physical sciences	2 054	2 428	2 261
Science general	8 018	10 059	10 494
Total science	23 691	29 385	36 924
Total Bachelor-level commencements	***108 079***	***140 182***	***161 356***

Source: DETYA (2000, a).

Attitudes among science and mathematics teachers about their profession

TIMSS reported on the attitude of science and mathematics teachers to teaching. Teachers were asked about the prestige of teaching in their country; whether teaching was their first choice as a career and whether they would change if they had the opportunity; and whether they felt that society and students appreciated their work. The results for Australia indicate that, in general, mathematics and science teachers felt unappreciated, and that they would rather have another job (Lokan et al 1996).

For example, teaching was considered by Australian teachers to rank lower compared to other occupations than in other countries (except for Iceland and Slovakia, which ranked teaching in a similar way to Australia). This was also reflected in the fact that the proportion of Australian teachers who perceived that society valued their work was among the lowest in the survey. While most Australian teachers believed that they were appreciated by their students, the proportion was still the second lowest in the survey. Importantly, while the proportion of Australian mathematics and science teachers who said that teaching was their first choice as a career was roughly equal to the country average for the survey, Australia and New Zealand stood out as the two countries with the highest percentage of teachers who would prefer to have another career.

Opportunities available for mathematics and science oriented students outside teaching

Increasingly over time people with mathematics qualifications have been sought out for new and emerging occupations in computing and finance. For instance, at the 1996 census, about 18 per cent of all people with qualifications in mathematics across all ages had entered the computing profession, only slightly more than the proportion in secondary teaching. By contrast, among the graduates of 1999, about 19.5 of those in full-time employment were in computing and only 3.9 per cent went into teaching (including university teaching). A significant proportion (22.1 per cent) were absorbed in the finance and business occupations and in other business-related occupations, such as organisational analyst.

These figures probably reflect trends in course choice made by young people with an aptitude for mathematics. It would appear that an increasingly large number of these have chosen fields other than mathematics at both school and university. The courses which they have seem to have entered are essentially those which lead to jobs which graduates in mathematics have also gravitated towards: computing, and business and finance. While these occupations have previously provided probably better financial returns than teaching, the exceptionally strong growth in these occupations has facilitated the shift from teaching and into them over time.

Implications for the mathematics and science teachers labour market in coming years

If these factors continue to influence the mathematics and science teachers labour market in the future in much the same way as they have up to now, then it could be expected that the number of new mathematics and science teachers would continue to decline or at best remain the same. This would lead to further tightening in a labour market that is already experiencing recruitment difficulties.

Two other factors are likely to exacerbate the situation further.

First, mathematics and science teachers probably have the same age profile as teachers in general so that they will be impacted on by the expected high retirement rate of the next five to ten years as discussed earlier in this chapter. Goodrum, Hackling and Rennie (2001 forthcoming) go further than this. They report that, according to the Australian Council of Deans of Education (ACDE) submission to the Teaching and Learning of Science Project, there is a general belief that the impact of retirements will be greater for secondary science and mathematics teachers than for other professional groups, presumably also other secondary teachers. This is an issue that could be tested in more detail when data from the 1999 Australian Council of Education survey of teachers is released.

Second, there is evidence that other English speaking countries are also experiencing shortages in these areas (see Chapter 4) and that they are attempting to recruit in Australia. The ACDE is quoted in Goodrum, Hacking and Rennie (2001) as noting that several recruitment agencies have been seeking to fill several hundred overseas positions at pay rates well above those applying in Australia. The ACDE estimated that perhaps 10 to 20 per cent of the annual cohort of Australian teacher graduates may be recruited to overseas position in the second half of 2000.

Taken together, these supply and demand considerations suggest that recruitment of science and mathematics teachers could become considerably more difficult in the coming years. This has been recognised to some extent within the education sector, and a number of state education authorities have taken steps to address this, as discussed in chapter 3.

PART D
CONCLUSIONS

Chapter 9

Summary and conclusions

The state of the teacher labour market in 2000

The early 1990s were a period of teacher surplus in Australia. As employment of teachers increased more rapidly in the second half of the 1990s, this led to a tightening of the teacher labour market. By the end of the decade and into 2000 the education authorities in the States and Territories were indicating that the teacher labour market was in balance across their jurisdiction. This applied in both the primary and secondary sectors, with the secondary sector experiencing slightly greater tightness.

However, in 2000 some recruitment difficulties were being experienced but only in particular specialisations of secondary teachers. These were mathematics, science and information technology (IT) and, to a lesser extent, modern foreign languages and industrial arts/technology. Vacancies for these types of teachers were especially difficult to fill in rural and remote regions, although such regions often experienced difficulty in recruiting most types of teachers. Recruitment difficulties for some other specialisations were confined to some States and Territories only.

At first glance, there did not seem to be a direct relationship between the growth of the teacher workforce by State and Territory and the range of specialisations experiencing recruitment difficulty. The hard-to-fill specialisations were difficult to fill in all States and Territories not only those with strong growth in teacher employment. However, there might be some difference in the severity of recruitment difficulties between States and Territories, but these were not quantified in the study.

Projections of demand and supply of teachers to 2003

In the period to 2003 teacher recruitment needs are projected to total between 12 000 and 13 000 each year. Some of this incorporates movements between education systems within a State (including between government and non-government sectors) and across States and Territories. Recent research indicates that the net loss of teachers during the ten years to the late 1990s was of the order of 2.9 per cent of the teacher workforce a year, or around 8500 teachers a year. This is substantially lower than the recruitment requirements. While this figure is subject to some qualifications, it provides the basis for estimating the national requirement for teacher graduates.

Estimates of completions from initial teacher training courses undertaken for this report indicate that in the next few years graduate numbers who will make themselves available for teaching will be of the order of 8300 to 9800, which is in excess of the net loss of teachers. Another piece of evidence pointing to the same conclusion is the finding that in the recent past government schools have relied on graduates for less than half of their recruitment needs. Even if this proportion is increased in view of the rising demand for teachers to 2003, the requirement for new graduates would appear to be below the projected supply.

Unfortunately it has not been possible to make similar assessments at the State and Territory level or for specialisations because of data limitations. Some States and Territories are likely to come under greater pressure than others. This could be alleviated through interstate migration of graduates and measures that education authorities have in their power to adopt to balance teacher requirements with supply.

Some longer term sources of pressure on the teacher labour market

No detailed projections were made for the period post 2003 but analysis is provided in the report on three developments which will have important implications for demand and supply of teachers in aggregate and for key specialisations.

Growth in student enrolments during the decade to 2010 is expected to be slower than during the 1990s with most of the increase concentrated in the secondary sector. Because of this slower overall growth and the continuing trend to non-government schools, it is also expected that the government sector in some of the slower growing States may experience a decline in student numbers.

The greatest pressure on the teacher labour market in the decade will come from the rapid ageing of the teaching workforce. States and Territories are already incorporating higher retirement rates into their forward projections for the period to 2003 but, on the evidence of the age structure of the teaching workforce, this should increase further in the period subsequent to 2003. These developments would be expected to lead to an increased demand for new teaching graduates in the coming years, as well as measures designed to improve the retention of teachers in teaching.

In the case of mathematics and science teachers, the ageing of the teaching workforce will be compounded by other factors which appear to be having a downward influence on the graduation levels for teachers with mathematics and science qualifications. This includes strong demand for young people with mathematical skills in the fast growing information technology industry. Recruitment difficulties in this area in particular could, on the evidence to date, increase.

Improving data on teachers for supply and demand analyses

Detailed analysis of the labour market for teachers at the State and Territory level and for disciplines was restricted in part by lack of suitable data. While much of the necessary information is available from a variety of sources, published and unpublished, some elements are either not available at all or their coverage is patchy. There are five areas for which improved information would be useful.

Quantifying recruitment difficulties

State and Territory education authorities generally hold some information (often of a qualitative nature) on teaching skills which are difficult to recruit and the number of teaching vacancies *within the government school sector* that have been hard to fill and/or remained unfilled, and in which location they occur. These are obtained in a variety of ways, but all rely on obtaining some information directly from schools. While these data appear to be broadly adequate for assessing the extent of recruitment difficulty within the government school sector, they provide only relatively basic information. There is no equivalent information available for the non-government sector.

Countries like the United Kingdom, the United States of America and New Zealand, use a formal regular school survey approach to collect hard-to-fill vacancy information. This has the added advantage of providing a vehicle for the collection of other policy useful information. In the United Kingdom, for instance, the Department for Employment and Education (DfEE) annual survey of teacher vacancies is used to provide a relative indication of shortages across a range of specialisations/subjects, as well as a measure of 'disguised skills shortages'. This occurs when schools adjust for the unavailability of certain teaching specialisations by having classes taught by teachers outside their home field of specialisation. As a result, the UK has a relatively rich source of data on teacher shortages and teacher skill utilization.

The teaching workforce

There is a relatively large amount of information available from the State education authorities about the number of permanent and fixed term teachers in the government school system, but little information about their specialisations. The most readily available source of information on teachers and their specialisations is the ACE survey of teachers which was first conducted in 1963 and then every ten years since 1979, with the latest survey being undertaken in 1999. Similarly, the data about student commencements and completions from initial teacher training courses do not provide disaggregation by specialization. This largely reflects the difficulty of collecting these kinds of information from the regular university statistics on students and courses. DETYA commissioned research into this matter and the results are expected in 2001.

The non-government sector has increased its share of overall teacher employment over time and now represents about a third of the school system. However, the only readily available source of published information on this sector is the publication ABS *Schools, Australia,* which provides information on the number of teachers and students, and the number of schools, by type of jurisdiction (e.g. Anglican, Catholic, etc) but no other information such as the break-up between permanent and contract teachers, and the age and specialization structures. Similarly, while casual and relief teachers are an important component of the teaching workforce and a broad estimate of the size of this group is possible from a mixture of data sources, this is likely to be understated. Furthermore, there is no information on the characteristics of these teachers.

The teaching pool

The actual size of the pool of people available to teach on a permanent, contract or relief/casual basis but who are not teaching or are under-utilised in their position is not known with any great accuracy across all States and Territories. The analysis presented in this report suggests that this pool in those States and Territories which are able to report on it can be quite significant, and can play an important part in balancing supply and demand in the teachers labour market.

Information that would be required on this pool includes subject specialization, the characteristics of the teachers (e.g. age) and their availability, both in terms of their preferred hours of work and place of teaching. The best that can be provided at the moment by some States is the number of teachers who have applied for permanent positions. Without additional information on these teachers, it is difficult to make a reliable assessment of their potential contribution to the supply of teachers.

Inflows and outflows of teachers to the teaching labour force

In order to assess the need for new teaching graduates to maintain balance in the labour market, it is necessary to have good information on the inflow and outflow from the teaching labour force. Inflows comprise people coming back from leave, new graduates and those returning to teaching after a period outside the teaching labour force. The first two categories are generally available but information on teachers returning to teaching are, by contrast, not. In the case of outflow, States and Territories have generally good information on retirements, resignations and people going on leave from the government school system but there is no comparable data on the non-government system. Even if these data were available for the non-government sector, outflows from a particular jurisdiction do not necessarily represent outflows from teaching as many teachers resign to move from one jurisdiction to another. It is these 'net' outflows that are relevant for labour market analysis.

Obtaining net outflows out of teaching rather than gross outflows is by definition difficult and so is information on returning teachers. This largely accounts for the lack of information in these areas. Census data are one source of information but have their limitations. Recent work at Monash University on Replacement Demand for various occupations using Labour Force surveys has attempted to provide information on the 'net replacement demand', which is the difference between net outflows and net inflows

of already qualified teachers. This has been a fruitful and useful line of research but, of course, it does not provide separately data on outflows and inflows. A possible source of such data would be a survey of the career path of teachers. From such data it should be possible to investigate and model the pattern of labour market behaviour followed by teachers from the time they complete their teaching course. This would complement analysis from the census and the labour force surveys. It may also be worth investigating whether teacher superannuation records could yield useful mobility information.

Recruitment practices of school systems and demand-supply adjustment mechanisms

While information is available on the recruitment practices of government schools, there is less information on the methods used by schools to adjust to recruitment difficulties: for instance, how do schools handle the situation where they are unable to fill a specialist position in the LOTE or mathematics area. To the extent that such adjustments are feasible, information of this kind would be helpful in order to provide not only a measure of imbalance between desired demand and supply but also a measure of the impact that such an imbalance may have on the school system. The information could also be used to assess the training/re-training needs of existing teachers who may be called on to fill the gap.

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ACRONYMS AND ABBREVIATIONS

ABS, Australian Bureau of Statistics

ACE, Australian Council of Education

ASCO, Australian standard classification of occupations

CESCEO, Conference of Education System Chief Executive Officers

DETYA, Department of Education, Training and Youth Affairs

DEWRSB, Department of Employment, Work Place Relations and Small Business.

DfEE, Department for Employment and Education (UK)

DIMA, Department of Immigration and Multicultural Affairs

ESL, English as a Second Language

FTE, Full-Time Equivalent

GCCA, Graduate Careers Council of Australia

HECS, Higher Education Contribution Scheme

LEO, Labour Economics Office (part of the DEWRSB regional structure)

LOTE , Languages Other Than English

MCEETYA, Ministerial Council on Employment, Education, Training and Youth Affairs

NCES, National Office of Education Statistics (USA)

GLOSSARY OF TERMS

Commencements (of teacher trainees), refers to the number of students commencing an initial teacher training course as defined in the DETYA Higher Education statistics. Courses coming within scope include undergraduate degree and Graduate Diploma (Diploma of Education) courses.

Completions (of teacher trainees), refers to the number of students completing an initial teacher training course.

(Employed) teachers, are full or part time teachers engaged on a permanent or fixed term basis i.e. regular teachers. It excludes relief and casual teachers who are engaged to fill in for permanent and contract teachers when these are not available. This group of ongoing teachers constitute the core workforce , ie. the majority of class room teachers. All statistics and references to teachers in this report relate to employed teachers, unless otherwise stated. Employed teachers can be expressed as head counts or in FTE terms. This definition of employed teachers is the same as that used in the ABS *Schools, Australia* publication. There it is used synonymously with teaching staff.

Full time equivalent or FTE, is a measure of all full and part time teachers expressed in terms of a full time work load. Thus two 0.5 teachers would count as 1 full time equivalent.

Growth Demand for teachers, is that portion of teacher demand related to the increase in total teacher requirements. It stems from factors like increases in enrolments or additions to the curriculum which require additional teachers to be hired. Growth demand in any one year is the difference between that year's requirement for teachers and the previous year's actual teacher employment level. It can be expressed either as FTE or as headcounts. It is often convenient to express the Growth Demand for a particular year (or period) as a percentage of the workforce in the previous year.

(New) Graduates is the same as completions.

Head count of teachers refers to the number of Teachers Employed, irrespective of whether they were employed full or part-time.

Net replacement demand refers to (gross) replacement demand less those teachers (other than new graduates) who enter the teaching workforce during the year. These entrants could be returning teachers or migrants. The net replacement rate is broadly a measure of the training rate required to satisfy the demand for teachers.

Pool of teachers(or pool teachers), refer to qualified teachers who are not currently part of employed teachers (as defined above) but are available for permanent or contract positions or would be under certain circumstances. These qualified teachers may currently be unemployed, be working in another occupation or in teaching as casual or relief teachers..

Recruitment difficulties, is used to refer to the situation where teaching vacancies are hard-to-fill and would normally require more concerted recruitment action, such as head hunting, to fill.

Replacement demand, is demand for teachers which stems from the need to recruit new teachers to replace those lost via separation (see definition for more details) from the teaching workforce. It affects both permanent and contract teachers.

Separation, also referred to as attrition or wastage, is a measure of the reduction in the teacher workforce as a result of teachers leaving the workforce (either permanently or for shorter periods). The measure has been defined to include retirements, teacher resignations, teachers going on leave, contract expiration and other categories such as deaths and dismissals.

Separation rate is the number of teachers who separate as a percentage of the teaching workforce. Separation rate can be defined only for permanent teachers or for permanent and contract teachers combined. In this report, separation rate refers to permanent teachers, unless otherwise indicated.

Shortages or shortfalls , refers to the inability to find sufficient numbers of suitably qualified teachers to satisfy the desired or target level of teachers. This difference is commonly referred to as "teacher shortages". Unlike recruitment difficulties shortages may persist and not be resolved by normal recruitment practices such as advertising.

Student teaching staff ratio (STR), is the number of students enrolled divided by numbers of teachers employed In this report, both students and teachers are expressed as full-time equivalents to derive this ratio.

Training rate is the ratio of teacher completions (or graduates) to the teaching workforce.

ATTACHMENT 1
DETAILED STATE AND TERRITORY REPORTS

Note: In the following tables in this Attachment, teacher numbers for 1984, 1986 and 1988 do not include special education teachers. (For the years prior to 1990 special education teachers were identified separately). From 1990 onwards these special education teachers have been included in overall primary/secondary figures.

New South Wales

Labour Market Background

In 1999 there were 34 762 FTE primary teachers and 37 079 FTE secondary teachers in government and non-government schools in New South Wales (*ABS Schools, Australia Cat. No. 4221.0*). From 1984 to 1999 teacher numbers increased substantially. In the primary sector the FTE of teachers grew by 22 per cent over the period and in the secondary sector it grew by 16 per cent.

Primary teacher numbers showed a strong growth over the period in both government and non-government schools. Secondary teacher numbers fell slightly in the early 1990s and then began to increase.

Student to teacher ratios in primary schools has been declining from 20.9 in 1984 to 17.9 in 1999. A similar decline is evident in secondary schools where the STR declined progressively from 13.4 in 1984 to 12.9 in 1999.

In general new graduates numbers have been sustained over 1988 to 1998. Primary teachers completions, which fell markedly during the latter part of the 1990s, revived in 1998. Numbers of teacher completions have basically been sustained above the 3000 mark from 1988 to 1998 and were 3509 in 1998.

Recruitment experience in the government schools sector

Primary

The survey results indicate that there is currently an adequate overall supply of primary teachers to fill full-time permanent vacancies, except for a small number of positions in some geographic locations.

Some recruitment difficulties exist in special education and mainly in Western Sydney and non-coastal New South Wales. There are occasional difficulties in filling vacancies for community language teachers. When positions cannot be filled by regular recruitment processes they are advertised in the press.

Secondary

Survey results from the secondary sector reveal that there is an adequate supply of secondary teachers except for teachers of Technological and Applied Studies (TAS), teachers of mathematics, science and special education in some geographic locations and some positions in particular geographic locations.

The shortage of TAS teachers has been evident for approximately four years. Mathematics and science (particularly physics) are areas in which shortages are projected to increase.

There is no general shortage of Languages other than English teachers. The only subject in which there is occasionally a difficult to fill vacancy is Japanese in Western Sydney or isolated areas of New South Wales. The number of such vacancies is less than ten a year.

Initiatives taken by the government education authorities to address areas of recruitment difficulty

The New South Wales Department of Education and Training (the Department) has developed and implemented a comprehensive suite of targeted strategies to promote teaching as a career, ensure a continuing overall supply of permanent quality teachers, and increase teacher supply in areas of shortfall. Key strategies to attract teachers to isolated areas of the State include:

- *Permanent Employment Program* which provides permanent employment opportunities to casual teachers. Vacancies filled through this program are advertised in the Department's Personnel Bulletin and the Sydney Morning Herald;

- *The Graduate Recruitment Program.* Graduates are only eligible to apply for appointment under this program in the year they successfully complete their academic studies;
- The Department has developed a Website to promote teaching as a career. The site has been developed to reach people with the skills and attributes to become outstanding teachers;
- *The Teacher Employment Priority Scheme* enables casual teachers to gain six, twelve, or eighteen months' accelerated priority for permanent employment for every 50 days service in government schools;
- *Casual Connect* is a free employment service on the internet that allows casual teachers to register their interest in long-term and short-term casual work in government schools; and
- *The Incentives Program*, which provides a range of benefits to teachers recruited to designated schools, including a priority for transfer after serving the required number of years in a rural or isolated school, a number of locality allowances, additional training and development, compassionate transfer status for teaching partners, a twenty per cent rental subsidy in some locations and an additional week's summer vacation in some locations.

Special education

Since 1994 it has been a requirement that people obtaining teacher qualifications will be employed in New South Wales government schools only if their course of teacher education contains special education study which is equivalent to a thirteen week unit of special education. This special education study is designed to ensure graduates have strategies and skills for teaching students with special education needs. In this respect, the Department provides expert advice and assistance to universities in the development of special education training programs and ensures that university proposals are consistent with the Department's qualification requirements and workforce needs in special education.

In addition the Department also sponsors between 30 to 40 teachers (Kindergarten to Year 12) each year to undertake a one-year full-time postgraduate qualification in special education. The Department also sponsors about 50 special education teachers (Kindergarten to Year 12) each year to upgrade their special education qualifications through a two-year part-time program.

Subject areas in high demand

The strategies and initiatives undertaken by the Department to address staffing shortfalls in TAS include:

- Negotiations with universities to expand current and establish new TAS preservice teacher education programs;
- Negotiations with higher education institutions in providing articulated pathways into TAS teaching;
- Sponsorships of students with appropriate backgrounds to undertake a graduate diploma in TAS at higher education institutions;
- Retraining programs;
- Joint TAFE–university TAS programs in which people with appropriate TAFE qualifications undertake a Bachelor of Education (Technologies) course to qualify as teachers in the TAS area;
- Mentoring programs for new teachers;
- Vigorous promotion of teaching in the TAS KLA and publicity materials to schools; and
- Advertising specific vacancies.

In mathematics and science the Department's strategies and initiatives include:

- Promotion of teaching as a career through careers markets aimed at both school students and university students, and to students undertaking mathematics or science degrees; and
- Development and negotiation of retraining programs for mathematics and science teachers.

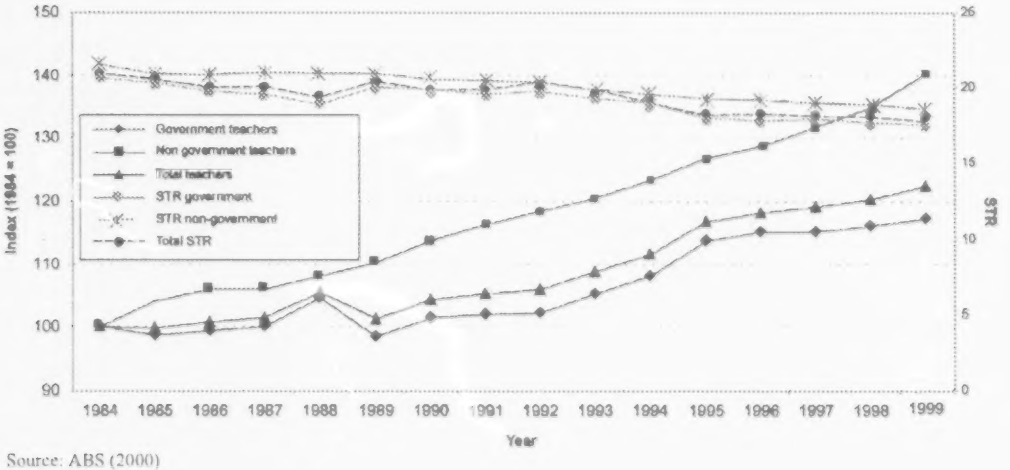
New South Wales primary

Table 1.1: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors.

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	453 840	21 924	20.7	139 241	6 474	21.5	593 081	28 398	20.9
1986	431 503	21 770	19.8	142 566	6 854	20.8	574 069	28 624	20.1
1988	434 811	22 933	19.0	146 356	6 994	20.9	581 167	29 927	19.4
1990	436 692	22 267	19.6	151 416	7 361	20.6	588 108	29 628	19.8
1991	439 928	22 363	19.7	153 449	7 529	20.4	593 377	29 892	19.9
1992	445 772	22 402	19.9	154 661	7 656	20.2	600 433	30 058	20.0
1993	446 911	23 051	19.4	154 633	7 801	19.8	601 544	30 852	19.5
1994	447 238	23 698	18.9	155 621	7 982	19.5	602 859	31 680	19.0
1995	448 325	24 912	18.0	157 734	8 216	19.2	606 059	33 128	18.3
1996	452 117	25 236	17.9	159 546	8 330	19.2	611 663	33 566	18.2
1997	453 142	25 248	17.9	161 777	8 531	19.0	614 919	33 779	18.2
1998	454 104	25 458	17.8	164 785	8 719	18.9	618 889	34 177	18.1
1999	455 008	25 689	17.7	168 618	9 073	18.6	623 626	34 762	17.9

Source: ABS (2000)

Chart 1.1: NSW Primary – Growth in FTE of teachers and student to teaching staff ratios, 1984 to 1999



Source: ABS (2000)

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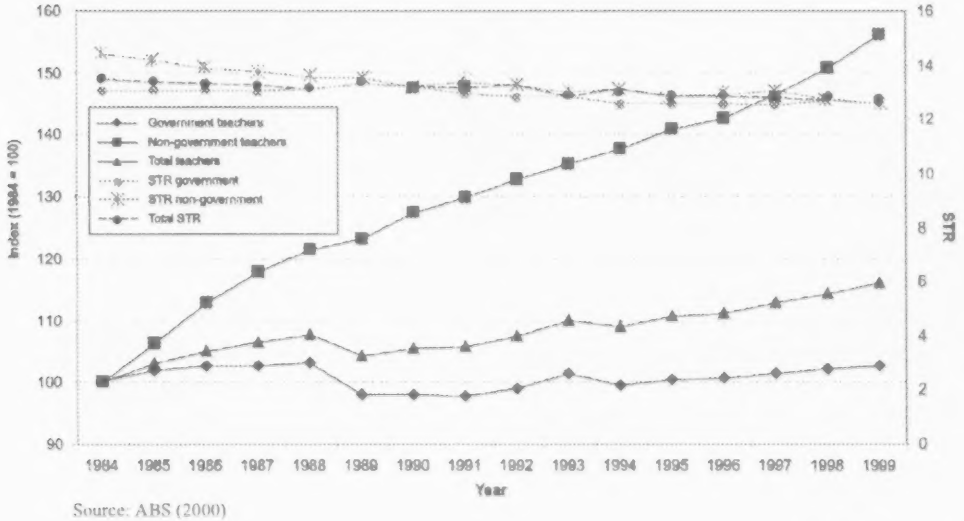
New South Wales secondary

Table 1.2: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors.

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	311 533	23 844	13.1	117 146	8 108	14.4	428 679	31 952	13.4
1986	318 353	24 429	13.0	127 173	9 154	13.9	445 526	33 583	13.3
1988	318 484	24 590	13.0	133 387	9 845	13.5	451 871	34 435	13.1
1990	306 494	23 352	13.1	136 021	10 330	13.2	442 515	33 682	13.1
1991	306 489	23 268	13.2	137 447	10 533	13.0	443 936	33 801	13.1
1992	311 080	23 540	13.2	138 715	10 771	12.9	449 795	34 311	13.1
1993	311 064	24 146	12.9	139 488	10 960	12.7	450 552	35 106	12.8
1994	308 533	23 674	13.0	140 457	11 160	12.6	448 990	34 834	12.9
1995	306 927	23 927	12.8	142 880	11 412	12.5	449 807	35 339	12.7
1996	307 961	23 966	12.8	145 723	11 562	12.6	453 684	35 528	12.8
1997	309 775	24 155	12.8	149 526	11 874	12.6	459 301	36 029	12.7
1998	309 295	24 310	12.7	153 372	12 215	12.6	462 667	36 525	12.7
1999	308 161	24 419	12.6	157 805	12 660	12.5	465 966	37 079	12.6

Source: ABS (2000)

Chart 1.2: NSW secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

Victoria

Labour Market Background

In 1999 there were 25 555 FTE primary teachers and 27 805 FTE secondary teachers in Victoria (ABS *Schools, Australia* Cat. No. 4221.0). Over the period 1984 to 1999, teacher numbers have fluctuated quite substantially. However, the overall trend for total teachers in the period has been downward due to falling teacher numbers in secondary schools. Growth in teacher FTE in the primary sector was only 1.4 per cent and the secondary sector showed a negative growth of 10.4 per cent.

Primary teacher numbers fell during the mid 1990s but rose in 1999 to be the highest in the period 1984 to 1999. Both the DETYA survey and ABS data show a substantial lift in primary school employment. Secondary numbers were in steady decline over the period.

Recently, numbers of teachers in the government sector have revived significantly after a progressive reduction. Consistent with the national trend, non-government schools are the major area of long term growth.

Teacher completions numbers reduced over the period 1988 to 1998. Peak training levels of over 3500 have now dropped to below the 2000 level and were 2056 in 1998. Primary teacher completions, which fell markedly during the latter 1990s, were well below 1000 at the end of the period. Secondary teachers have followed a similar trend and in 1998 were only just over half the 1988 level.

Recruitment experience in the government school sector

Primary

At a census conducted in February 2000, the Department of Education asked every government school to complete a survey of recruitment difficulties. The survey results indicated that recruitment shortfalls were 'isolated and sporadic' and limited mainly to particular geographical or curriculum areas. A number of Languages other than English areas were identified, together with special education and instrumental music.

The results of the 2000 survey showed there were more difficult to fill vacancies reported in primary schools than for secondary schools, which is consistent with employment trends noted above.

Secondary

Recruitment was less of a problem in the secondary sector and the main areas of difficulty were for technology teachers, Languages other than English teachers, mathematics and science. Some specific locations in more remote rural areas and areas on the outer fringe of Melbourne experienced recruitment difficulties.

Initiatives taken by Schools and the Education Department to address areas of recruitment difficulties

Schools

In Victoria, many core functions and responsibilities have been devolved to schools, including responsibility for workforce planning and teacher recruitment. As such, schools now take an active role in ensuring they have sufficient and high quality staff to suit their schools' requirements.

Results from the Teacher Recruitment Difficulties Survey indicated that some schools in the primary and secondary sectors used the following strategies in recruiting teaching staff:

- financial incentives;

- advertising nationally;
- contacting Teacher Training Institutions and Subject Associations to target recommended applicants;
- having the last teacher training round in the year so they can offer early employment for the following school year;

Higher commencement salaries have also been achieved.

Department

One of the more high profile strategies being developed by the Department is the offering of up to 220 teaching scholarships in each of three years to attract the brightest and best young graduates. Details of this scheme are at http://www.sofweb.vic.edu.au/hrm/recruit/scholarship.htm.

It is proposed that implementation of the scholarship program should not only increase the number of high quality graduates seeking employment as teachers for 2002 and beyond in Victorian government schools, but should target employment to geographic locations where there are recruitment difficulties or subject areas where there is increased teacher demand.

Other potential recruitment strategies focus on early employment offers to teacher graduates, promotional/information campaigns, higher commencement salaries in special circumstances, and refresher courses.

The survey response noted that development of a teacher employment register would assist in the targeting of qualified teachers available for relief work.

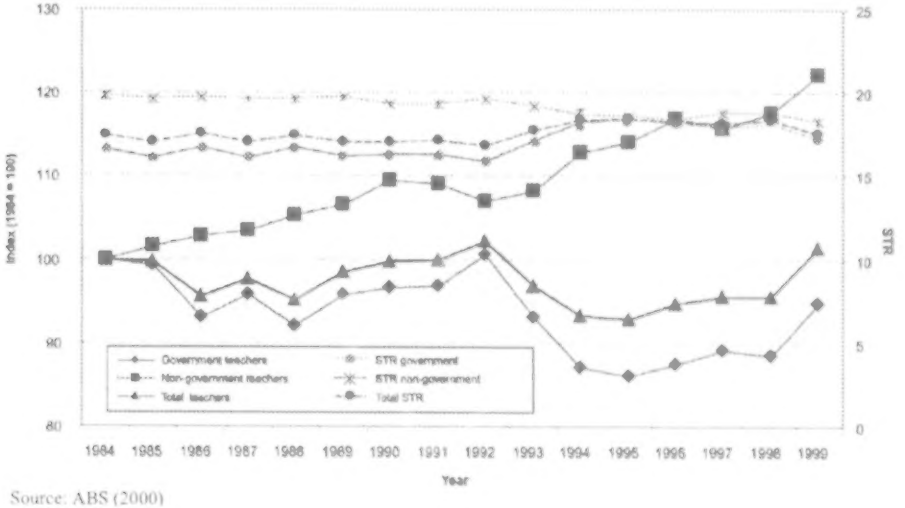
Victoria primary

Table 1.3: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	317 022	19 059	16.6	121 757	6 139	19.8	438 779	25 198	17.4
1986	297 161	17 752	16.7	124 304	6 317	19.7	421 465	24 069	17.5
1988	292 686	17 538	16.6	126 685	6 461	19.6	419 371	23 999	17.5
1990	299 276	18 420	16.2	129 606	6 720	19.3	428 882	25 140	17.1
1991	301 140	18 468	16.3	129 413	6 699	19.3	430 553	25 167	17.1
1992	303 752	19 178	15.8	128 556	6 572	19.6	432 308	25 750	16.8
1993	303 985	17 742	17.1	127 529	6 637	19.2	431 514	24 379	17.7
1994	302 897	16 583	18.2	129 229	6 928	18.7	432 126	23 511	18.4
1995	301 515	16 376	18.4	130 096	6 999	18.6	431 611	23 375	18.5
1996	303 769	16 684	18.2	132 053	7 172	18.4	435 822	23 856	18.3
1997	304 773	16 985	17.9	133 365	7 099	18.8	438 138	24 084	18.2
1998	307 147	16 882	18.1	135 094	7 212	18.7	442 241	24 094	18.4
1999	310 218	18 060	17.1	136 787	7 495	18.3	447 005	25 555	17.5

Source: ABS (2000)

Chart 1.3: Victoria primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

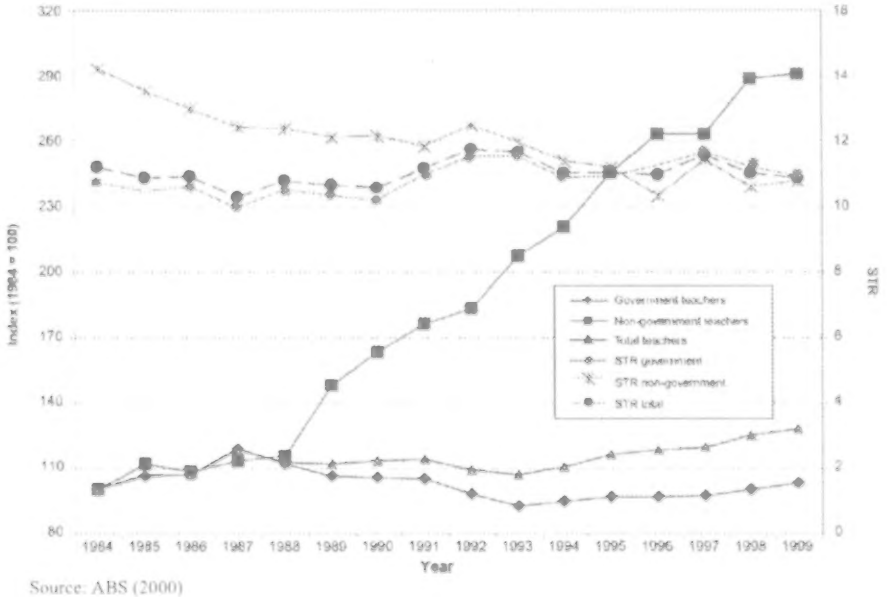
Victoria secondary

Table 1.4: number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	250 277	22 686	11.0	117 549	8 341	14.1	367 862	31 027	14.5
1986	243 732	21 609	11.3	124 384	9 178	13.6	368 116	30 787	14.5
1988	234 615	21 424	11.0	128 558	9 674	13.3	363 173	31 098	14.3
1990	227 300	21 530	10.6	128 180	9 789	13.1	355 480	31 319	13.9
1991	232 246	20 979	11.1	126 714	9 722	13.0	358 960	30 701	14.1
1992	230 157	21 372	10.8	125 157	9 620	13.0	355 314	30 992	13.9
1993	222 651	19 809	11.2	123 432	9 590	12.9	346 086	29 399	14.5
1994	217 431	18 051	12.0	123 637	9 732	12.7	341 068	27 783	15.1
1995	213 290	17 730	12.0	125 376	9 960	12.6	338 666	27 690	15.1
1996	213 293	17 360	12.3	127 340	10 123	12.6	340 633	27 483	15.1
1997	213 703	17 170	12.4	129 583	10 330	12.5	343 286	27 500	15.1
1998	214 266	16 881	12.7	130 893	10 419	12.6	345 159	27 300	15.3
1999	214 631	17 097	12.6	132 918	10 708	12.4	347 549	27 805	14.9

Source: ABS (2000)

Chart 1.4: Victoria secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

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Queensland

Labour Market background

In 1999 there were 21 874 FTE primary teachers and 18 399 FTE secondary teachers in Queensland (ABS *Schools, Australia Cat. no. 4221.0*). From 1984 to 1999 teacher numbers grew very rapidly in both the primary and the secondary sectors. In the primary sector the FTE of teachers grew by 47 per cent over the period and in the secondary sector it grew by 45 per cent.

The overall trend in teacher numbers over the period 1984 to 1999 showed the most rapid growth in teacher numbers more than any other State. In 1984 the FTE of primary teachers was 14 879 and had risen to 21 874 in 1999. For secondary schools the FTE of teachers was 12 683 in 1984 and had risen to 18 399 in 1999.

Student teacher ratios in primary schools also fell during this period from 20.0 in 1984 to 16.4 in 1999. Secondary school's STRs showed a decrease in STRs from the mid-1980s to the mid-1990s, and then increased, dropping back in 1999.

Teacher completion numbers in Queensland were consistently above 2000 in the late 1980s and early 1990s, but fell to levels of about 75 per cent below the trend for most of the 1990s. Numbers in 1998 revived to be 2058. The main contribution to the falling numbers was in primary teacher training.

Recruitment experience in the government school sector

Primary

The DETYA survey results show that recruitment difficulties are minimal in the primary sector. It is reported that country area vacancies for teacher positions are harder to fill as they occur during the year.

Secondary

The difficult to fill secondary vacancies occur in rural and remote areas of the State.

Positions for mathematics and science are most hard to fill, followed by manual arts and home economics. The growing number of VET courses in schools has led to increased demand for manual arts and home economics teachers who can teach related specialisations in the senior secondary years.

Initiatives taken by the Education Department to address areas of recruitment difficulty

Education Queensland has developed an effective school staffing system that includes a monitoring of vacancies and a State-wide approach to teacher transfers.

As indicated previously, there appears to be no shortage of teachers in the primary sector in Queensland. The regular flow of graduates from pre-service courses, along with the pool of existing unemployed teachers, ensures that the primary sector remains adequately staffed.

In the secondary sector, the demand for teachers has continued to grow due to the growth in secondary numbers. Recruitment activities have ensured that teacher demand has been met. Education Queensland has commenced a campaign to increase student retention to Year 12, which will impact on future demand for secondary teachers.

Education Queensland closely monitors teacher supply and demand. Vacancies in all State schools are tracked on a fortnightly basis to identify trends in teacher demand. Historical data on patterns on teacher behaviour with respect to separating from and joining the Department are used to generate forecasts on future requirements for teachers.

To meet the continuing demand for new teachers, students in preservice education courses are made aware of the benefits of employment with Education Queensland. Other strategies used to meet the demand for teachers are interstate marketing, national advertising of specific school vacancies, and early offers to graduating students.

Graduate teachers from rural and remote areas tend to view country service more favourably, and are more likely to return to rural schools to begin their teaching careers. To address the issues of staffing schools in rural and remote areas, Education Queensland therefore provides scholarships to assist Year 12 students from rural and remote areas who have chosen primary teaching as a career. The scholarships take the form of financial assistance for the four years that the student is studying a Bachelor of Education (primary) course at a Queensland university. There are five scholarships, each valued at $20 000. Following satisfactory completion of their course and suitability assessment, successful applicants are guaranteed employment with Education Queensland for a minimum of four years in any geographical location in Queensland.

Around 6 per cent of Education Queensland's students identify as being of Aboriginal or Torres Strait Islander background, but only 0.83 per cent of its teachers have a similar identification. To address this imbalance, Education Queensland offers scholarships to non-school leavers from Aboriginal or Torres Strait Islander backgrounds. The scholarships provide financial assistance for students to complete a Bachelor of Education at a Queensland university. The scholarships are valued at a maximum of $20 000 each. Following the satisfactory completion of their course and gaining a departmentally determined suitability rating, scholarship holders are guaranteed offers of employment with Education Queensland for a time equivalent to their scholarship period. Employment is conditional upon the scholarship holder maintaining teacher registration and being willing to be employed in any geographical location in Queensland

Education Queensland also increases indigenous participation in teaching through the Remote Area Teacher Education program (RATEP). RATEP is a partnership involving Education Queensland, indigenous communities, James Cook University, and the Far North Queensland TAFE in Cairns. On-site teacher education occurs at 20 sites across Queensland, including Boigu and Yorke Islands in the Torres Strait, Napranum and Aurukun on the Cape, and Mornington Island in the Gulf.

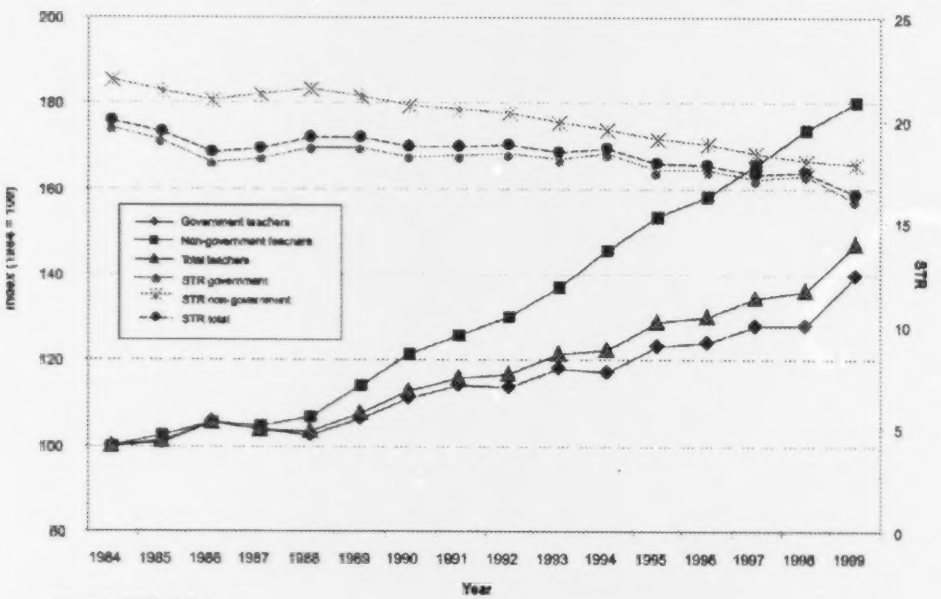
Queensland primary

Table 1.5: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	239 349	12 227	19.6	58 082	2 652	21.9	297 431	14 879	20.0
1986	229 877	12 875	17.9	58 522	2 798	20.9	288 399	15 673	18.4
1988	233 312	12 542	18.6	60 989	2 835	21.5	294 301	15 377	19.1
1990	24 7554	13 597	18.2	66 481	3 218	20.7	314 035	16 815	18.7
1991	254 397	13 927	18.3	68 322	3 334	20.5	322 719	17 261	18.7
1992	255 645	13 919	18.4	70 187	3 454	20.3	325 832	17 373	18.8
1993	260 493	14 436	18.0	72 343	3 636	19.9	332 836	18 072	18.4
1994	262 499	14 327	18.3	75 223	3 857	19.5	337 722	18 184	18.6
1995	264 567	15 070	17.6	77 377	4 065	19.0	341 944	19 135	17.9
1996	266 298	15 164	17.6	78 797	4 191	18.8	345 095	19 355	17.8
1997	267 147	15 633	17.1	80 537	4 393	18.3	347 684	20 026	17.4
1998	270 434	15 663	17.3	82 748	4 609	18.0	353 182	20 272	17.4
1999	273 710	17 091	16.0	85 278	4 783	17.8	358 988	21 874	16.4

Source: ABS (2000)

Chart 1.5: Queensland primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

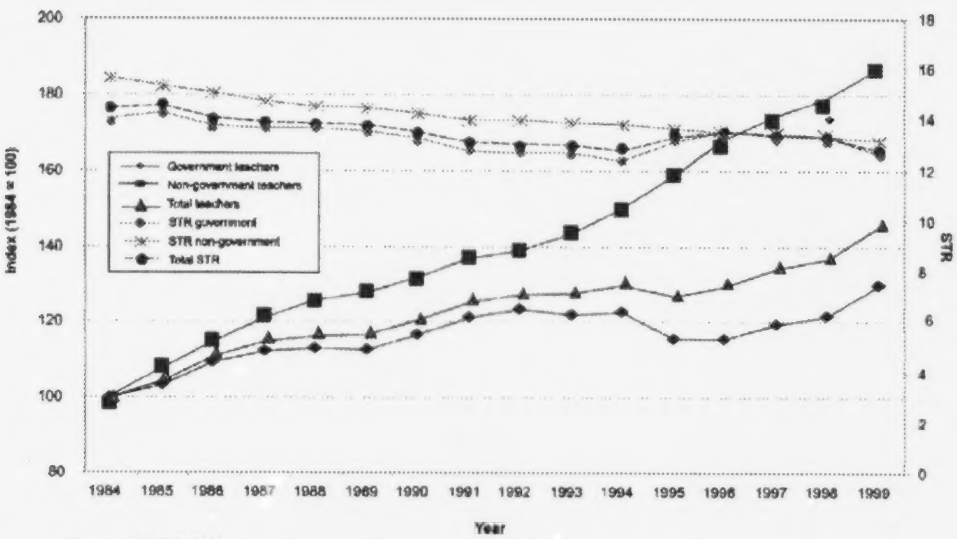
Queensland secondary

Table 1.6: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	130 531	9 298	14.0	52 981	3 385	15.7	183 512	12 683	14.5
1986	139 553	10 160	13.7	58 241	3 871	15.0	197 794	14 031	14.1
1988	143 011	10 499	13.6	61 702	4 247	14.5	204 713	14 746	13.9
1990	143 695	10 842	13.3	63 576	4 460	14.3	207 271	15 302	13.5
1991	143 628	11 259	12.8	64 469	4 618	14.0	208 097	15 877	13.1
1992	145 477	11 463	12.7	65 650	4 702	14.0	211 127	16 165	13.1
1993	143 770	11 346	12.7	67 125	4 841	13.9	210 895	16 187	13.0
1994	140 735	11 391	12.4	70 074	5 076	13.8	210 809	16 467	12.8
1995	140 983	10 735	13.1	73 185	5 363	13.6	214 168	16 098	13.3
1996	145 388	10 734	13.5	76 651	5 685	13.5	222 039	16 419	13.5
1997	148 116	11 087	13.4	79 306	5 897	13.4	227 422	16 984	13.4
1998	150 603	11 289	13.3	80 841	6 057	13.3	231 444	17 346	13.3
1999	152 166	12 073	12.6	83 430	6 326	13.2	235 596	18 399	12.8

Source: ABS (2000)

Chart 1.6: Queensland secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

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South Australia

Labour Market background

In 1999 there were 9302 FTE primary teachers and 7463 FTE secondary teachers in South Australia (ABS *Schools, Australia Cat. no. 4221.0*). Overall, from 1984 to 1999 teacher numbers in the primary sector grew despite fluctuations, whilst the secondary sector experienced falling teacher numbers to the mid 1990s but have since increased. In the primary sector the FTE of teachers grew by 9 per cent over the period and in the secondary sector there was negative growth of 12 per cent.

Student to teacher ratios in the primary sector show a downward trend from 1984 to 1990 then increased slightly to the mid 1990s before slightly declining again. Ratios in the secondary sector showed a decline from mid 1980s to the early 1990s with a slight increase recorded in STRs to 1999.

Overall numbers completing teaching courses have fallen from the levels of the early 1990s. The reduction is most marked in secondary schools (where enrolments have declined) and completions in primary were sustained prior to reductions in 1997 and 1998.

Recruitment experience in the government school sector

A survey of the labour market for primary and secondary teachers in government schools was conducted in February 2000 by DETYA, and the information was provided by the State school authorities. The survey covered information on the current teaching workforce, projected teaching workforce, recruitment of teachers and difficulties encountered, and the size, nature and utilisation of the teaching workforce.

Primary

Generally, in South Australia there is not expected to be any difficulty in the short term in filling vacancies, particularly in primary schools. In the next five to ten years, there will be increasing vacancies as teachers in the older cohorts retire.

Some specific areas of high demand for teachers in the primary sector are Asian Languages and Special Education.

Secondary

Specific areas in the secondary sector which indicate a high demand for teachers are: Mathematics, Senior specialist Science (i.e. Physics, Chemistry and Agriculture); Technical Studies (Manual Arts); Home Economics; Asian Languages; and Special Education (for students with physical and intellectual disabilities).

Short term vacancies in country areas and in hard to staff metropolitan locations are becoming increasingly difficult to fill.

Initiatives taken by the Department of Education, Training and Employment to address areas of recruitment difficulty

The following strategies are being using in South Australia to address the shortages:

- Regular meetings (at least four times per year) between departmental and university teacher training representatives;
- Retraining opportunities in areas of shortage;
- Specific units on 'Country Teaching' established within university courses;

- Increased opportunities for employment in country schools through the introduction of 'School Choice' vacancies, whereby schools declare and select for vacancies;
- Short term country vacancies filled by permanent teachers, who undertake to move on an annual basis;
- A significant level of country incentives to attract teachers to country locations, with additional options being considered;
- The recent appointment of a Project Officer to support teachers recruited to country schools. The Project Officer also identifies teaching demands in country areas and supports undergraduates specialising in areas of high demand to obtain employment;
- Within South Australia a Ministerial Committee for the Teaching and Learning of Mathematics has been established to focus on teacher shortages in this area and to identify strategies to redress this situation;
- The Department and the Science Teachers Association are co-delivering professional development targeted at country and city teachers so as to support this area of shortage;
- The Languages other than English Plan 1998-2007 provides for increased funding to expand the Languages Retraining Program to increase the numbers of appropriately qualified teachers of languages;
- The three year national Quality Teacher Program commenced in 2000 to update and improve teachers' skills and understanding in the teaching of literacy, numeracy, science, mathematics, information technology and vocational education; and
- South Australia chairs the MCEETYA Teacher Preparation, Recruitment and Training Taskforce.

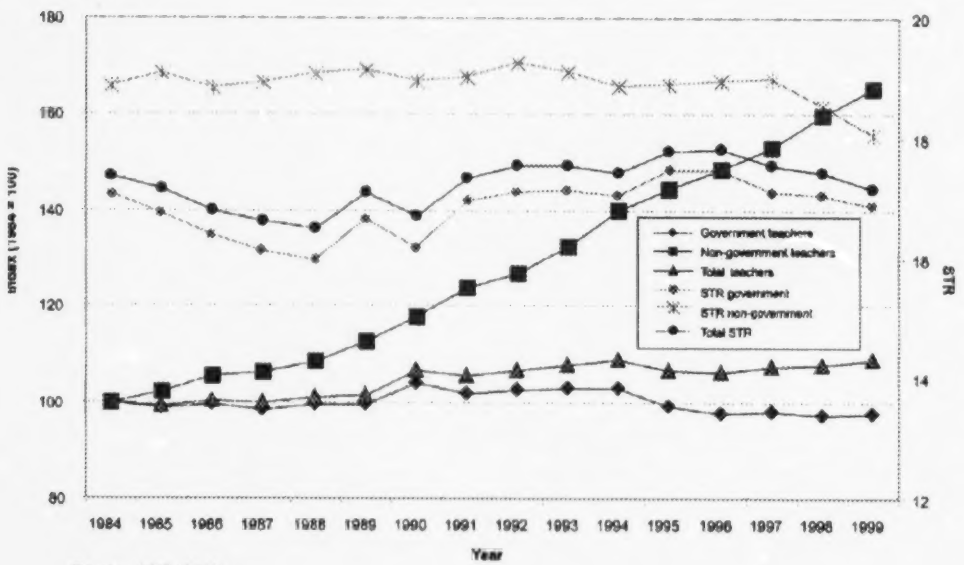
South Australia primary

Table 1.7: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	121 101	7 095	17.1	27 191	1 441	18.9	148 292	8 536	17.4
1986	115 388	7 050	16.4	28 586	1 519	18.8	143 974	8 569	16.8
1988	112 349	7 048	15.9	29 770	1 562	19.1	142 119	8 610	16.5
1990	119 490	7 389	16.2	32 179	1 698	19.0	151 669	9 087	16.7
1991	122 139	7 213	16.9	33 925	1 784	19.0	156 064	8 997	17.3
1992	124 254	7 265	17.1	35 123	1 825	19.2	159 377	9 090	17.5
1993	124 802	7 284	17.1	36 481	1 911	19.1	161 283	9 195	17.5
1994	124 043	7 284	17.0	38 037	2 018	18.8	162 080	9 302	17.4
1995	122 582	7 026	17.4	39 355	2 082	18.9	161 937	9 108	17.8
1996	120 654	6 915	17.4	40 627	2 143	19.0	161 281	9 058	17.8
1997	118 812	6 954	17.1	41 863	2 207	19.0	160 675	9 161	17.5
1998	117 708	6 905	17.0	42 675	2 303	18.5	160 383	9 208	17.4
1999	116 647	6 919	16.9	42 991	2 383	18.0	159 638	9 302	17.2

Source: ABS (2000)

Chart 1.7: South Australia primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

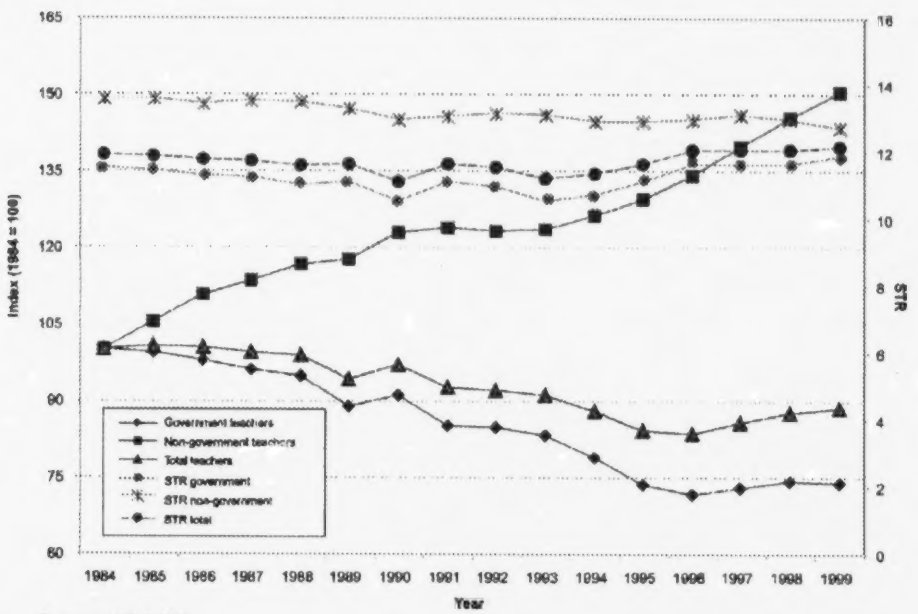
South Australia secondary

Table 1.8: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	78 717	6 837	11.5	21 938	1 616	13.6	100 655	8 453	11.9
1986	75 686	6 698	11.3	24 059	1 789	13.4	99 745	8 487	11.8
1988	71 108	6 465	11.0	25 333	1 883	13.5	96 441	8 348	11.6
1990	65 378	6 214	10.5	25 688	1 983	13.0	91 066	8 197	11.1
1991	64 675	5 818	11.1	26 094	1 998	13.1	90 769	7 816	11.6
1992	63 302	5 788	10.9	26 123	1 988	13.1	89 425	7 776	11.5
1993	59 818	5 693	10.5	26 126	1 996	13.1	85 944	7 689	11.2
1994	57 597	5 381	10.7	26 334	2 039	12.9	83 931	7 420	11.3
1995	55 889	5 027	11.1	26 966	2 090	12.9	82 855	7 117	11.6
1996	56 850	4 888	11.6	28 074	2 164	13.0	84 924	7 052	12.0
1997	57 699	4 974	11.6	29 566	2 256	13.1	87 265	7 230	12.1
1998	58 624	5 053	11.6	30 453	2 350	13.0	89 077	7 403	12.0
1999	59 656	5 033	11.9	30 929	2 430	12.7	90 585	7 463	12.1

Source: ABS (2000)

Chart 1.8: South Australia primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

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Western Australia

Labour Market background

In 1999 there were 10 915 FTE primary teachers and 10 015 FTE secondary teachers in Western Australia (ABS *Schools, Australia Cat. No. 4221.0*). From 1984 to 1999 teacher numbers steadily increased. From 1984 to 1999, in the primary sector the FTE of teachers grew by 38 per cent, whereas the secondary sector showed a higher growth rate of 45 per cent.

Student to teacher ratios in the primary sector fell from 1984 to 1999 (20.4 to 17.5), this fall in STRs was also evident in the secondary sector with a decrease in STR from 1984 to 1999 (13.5 to 12.5).

Overall teacher completions numbers in Western Australia have been sustained with the exception of 1998 when there was a significant drop. Numbers completing primary were more sustained prior to 1998 but there has been a progressive winding back of secondary completions.

Recruitment experience in the government school sector

A survey of the labour market for primary and secondary teachers in government schools was conducted in February 2000 by DETYA, and the information was provided by the State school authorities. The survey covered information on the current teaching workforce, projected teaching workforce, recruitment of teachers and difficulties encountered, and the size, nature and utilisation of the teaching workforce.

Primary

There was no overall shortage of generalist primary teachers. However, a lack of teacher mobility presented a major problem because teachers were unwilling or unable to move from metropolitan areas to take up positions in rural schools. The worst affected areas were the Pilbara and Goldfields Districts, but even schools within one or two hours drive of Perth were hard to staff. In Languages other than English, shortages were experienced in Italian and Japanese. Rural schools were most affected. There was also a small shortfall of fully trained education support teachers for rural areas.

Secondary

As for primary schools, it was difficult to fill teacher vacancies in the Pilbara and Goldfields area due to perceptions about climate, poor infrastructure and social isolation. In 1999, positions in schools within one or two hours drive from Perth became more difficult to fill due to the fall in the number of graduate teachers caused by the extension of the base training course for secondary teachers from three to four years.

Initiatives taken by the Education Department to address areas of recruitment difficulty

In the primary sector in Languages other than English some schools utilised telematics to deliver learning programs. A small number of partially trained teachers, untrained teachers who were 'native speakers' or those who were skilled in the language being taught were employed.

The following strategies were used to cope with teacher shortages in the secondary sector:

- the introduction of internships for students in their final year of training who have successfully completed their teaching practices and most of their academic requirements;
- the use of teachers who have minor units of study and interest and or experience in teaching the specialist area;
- re-arranging timetables to allow for the optimum use of existing specialist teachers both within the school and across schools in rural areas;

- limited use of untrained teachers who have skills in the specialist area, particularly in Design and Technology where local tradesmen worked with a trained teacher; and
- alternative methods of curriculum delivery such as telematics.

In the primary and secondary sector, the Department has introduced a number of initiatives to address teacher demand and supply issues, these were:

- Graduate Diploma of Education Scholarships; Science Scholarships; Teacher Practicum Scholarships; Cadetships;
- Teaching Internships; Site Based Teacher Training; Graduate Support Program; Graduate Certificate in Learning Technologies; Early Offers of Employment; Permanency and Graduate Placement Trial; and
- Regional Professional Development Centre; Country Incentives Package; Remote Teaching Service.

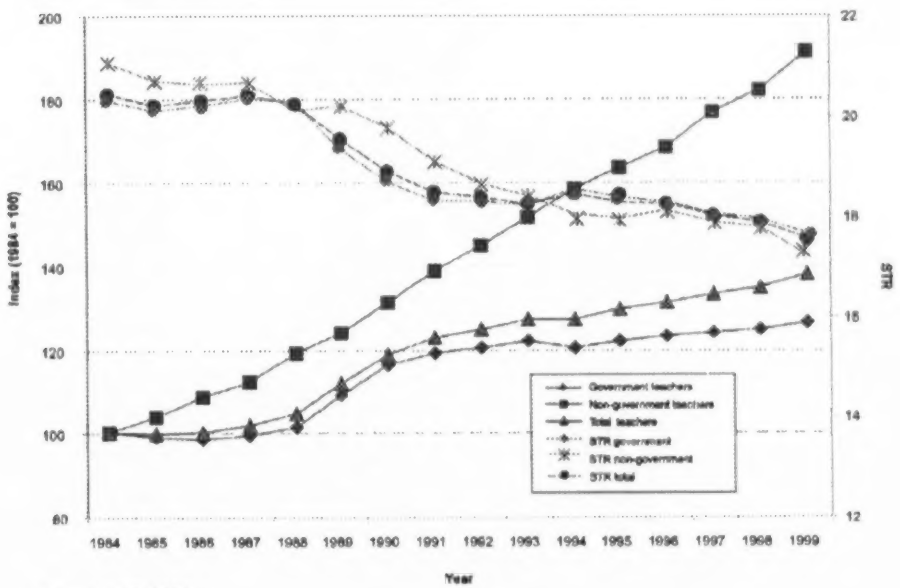
Western Australia primary

Table 1.9: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	131 561	6 488	20.3	29 905	1 419	21.1	161 466	7 907	20.4
1986	128 875	6 381	20.2	31 828	1 543	20.6	160 703	7 924	20.3
1988	133 366	6 579	20.3	34 012	1 692	20.1	167 378	8 271	20.2
1990	140 629	7 535	18.7	36 735	1 861	19.7	177 364	9 396	18.9
1991	141 702	7 736	18.3	37 531	1 968	19.1	179 233	9 704	18.5
1992	142 897	7 803	18.3	38 362	2 058	18.6	181 259	9 861	18.4
1993	143 871	7 899	18.2	39 653	2 153	18.4	183 524	10 052	18.3
1994	144 885	7 813	18.5	40 509	2 247	18.0	185 394	10 060	18.4
1995	145 561	7 919	18.4	41 560	2 317	17.9	187 121	10 236	18.3
1996	145 837	7 979	18.3	43 222	2 387	18.1	189 059	10 366	18.2
1997	145 088	8 035	18.1	44 760	2 505	17.9	189 848	10 540	18.0
1998	144 942	8 086	17.9	45 894	2 583	17.8	190 836	10 669	17.9
1999	144 746	8 202	17.6	46 677	2 713	17.2	191 423	10 915	17.5

Source: ABS (2000)

Chart 1.9: Western Australia primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

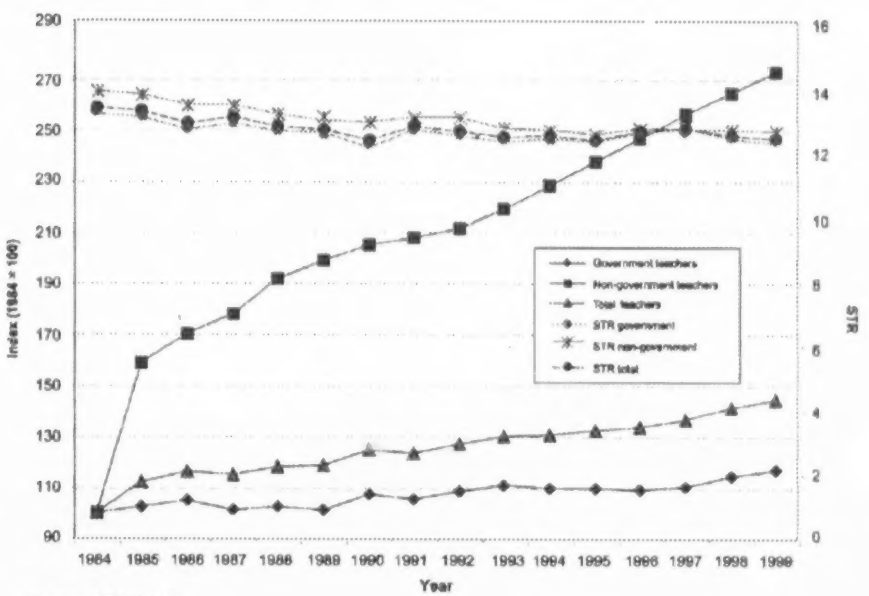
Western Australia secondary

Table 1.10: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	75 769	5 700	13.3	25 823	1 846	14.0	101 592	7 546	13.5
1986	76 537	5 983	12.8	28 344	2 091	13.6	104 881	8 074	13.0
1988	74 604	5 844	12.8	31 242	2 352	13.3	105 846	8 196	12.9
1990	74 682	6 101	12.2	32 840	2 515	13.1	107 522	8 616	12.5
1991	77 169	6 019	12.8	33 454	2 549	13.2	110 623	8 568	12.9
1992	78 137	6 200	12.6	34 190	2 595	13.2	112 327	8 795	12.8
1993	78 580	6 316	12.4	34 635	2 691	12.9	113 215	9 007	12.6
1994	78 220	6 242	12.5	35 798	2 801	12.8	114 018	9 043	12.6
1995	77 530	6 254	12.4	37 030	2 921	12.7	114 560	9 175	12.5
1996	78 877	6 219	12.7	38 870	3 025	12.8	117 747	9 244	12.7
1997	80 987	6 300	12.9	40 242	3 143	12.8	121 229	9 443	12.8
1998	81 641	6 528	12.5	41 550	3 249	12.8	123 191	9 777	12.6
1999	82 486	6 664	12.4	42 700	3 351	12.7	125 186	10 015	12.5

Source: ABS (2000)

Chart 1.10: Western Australia secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

Tasmania

The current labour market for teachers

There were 2 894 FTE primary teachers and 2 853 FTE secondary teachers in Tasmania in 1999 (ABS *Schools, Australia Cat. No. 4221.0*). Over the period 1984 to 1998 teacher numbers have been declining in both the primary and secondary sectors. This decline in teacher numbers was more prominent in government schools. The growth in the number of primary teachers was negative at 2 per cent and in the secondary sector growth rate was negative at 7 per cent.

Student to teacher ratios in the primary sector increased from the mid-1980s to the early 1990s and have since been declining. STRs in the secondary sector have after rising in the 1980s have remained relatively constant since 1991.

Overall numbers of completions have been sustained in Tasmania

Recruitment experience in the government school sector

Primary

The DETYA survey indicated that there were some shortages of teachers in early childhood in one district in Tasmania, caused by a clustering of separations.

Secondary

For all identified categories (other than special education) the difficulties were in finding suitable replacement teachers for absent staff. The occurrences were of one or two instances only for each subject area. All positions were eventually filled. The difficulties were exacerbated in rural areas.
The Department has not experienced difficulty in filling permanent positions, except as noted when seeking teachers for hearing impaired or vision impaired students.

Initiatives taken by the Education Department to address shortages

In the primary sector the previous shortage was solved by offering a number of staff conversions to permanent status and careful redeployment of the staff into vacancies as they arose. The Tasmanian Government is looking to develop and possibly expand its student scholarship program for final year or beginning Bachelor of Teaching students.

For secondary schools the Department has established on-line mentoring programs for teachers teaching outside their specialisation(s). There are graduate certificate programs in various educational specialisations available for teachers to upgrade their qualifications. The Department has worked with the University of Tasmania to more closely align its graduate output with the Department's needs.

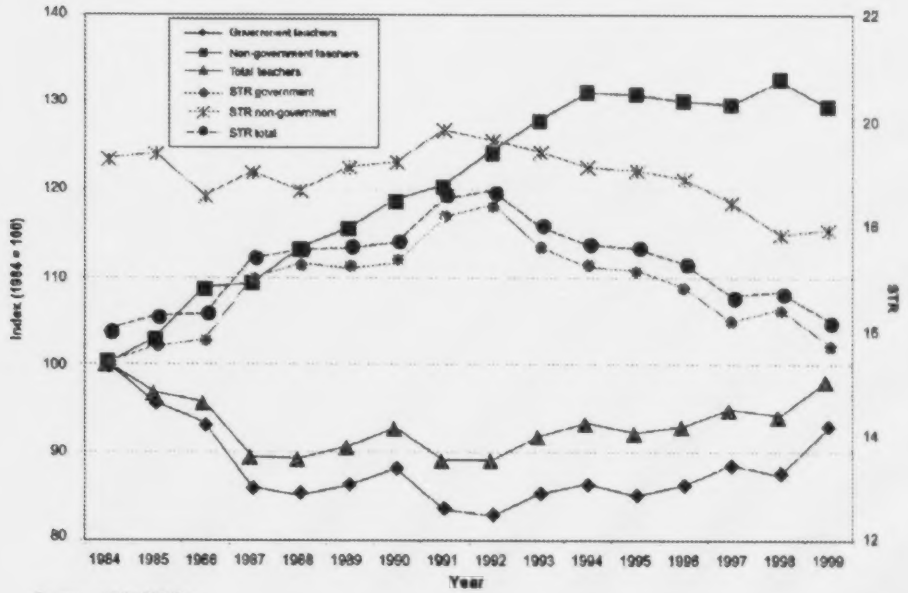
Tasmania primary

Table 1.11: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	38 384	2 495	15.4	8 719	453	19.2	47 103	2 948	16.0
1986	36 755	2 326	15.8	9 132	493	18.5	45 887	2 819	16.3
1988	36 509	2 119	17.2	9 553	513	18.6	46 062	2 632	17.5
1990	37 881	2 196	17.3	10 321	523	19.2	48 202	2 734	17.6
1991	37 674	2 081	18.1	10 789	545	19.8	48 463	2 626	18.5
1992	37 918	2 063	18.4	11 029	563	19.6	48 947	2 626	18.6
1993	37 380	2 127	17.6	11 218	579	19.4	48 598	2 706	18.0
1994	37 033	2 157	17.2	11 314	593	19.1	48 347	2 750	17.6
1995	36 341	2 122	17.1	11 245	592	19.0	47 586	2 714	17.5
1996	36 097	2 150	16.8	11 110	589	18.9	47 207	2 739	17.2
1997	35 663	2 208	16.2	10 808	587	18.4	46 471	2 795	16.6
1998	35 661	2 177	16.4	10 660	599	17.8	46 321	2 776	16.7
1999	36 318	2 308	15.7	10 479	586	17.9	46 797	2 894	16.2

Source: ABS (2000)

Chart 1.11: Tasmania primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

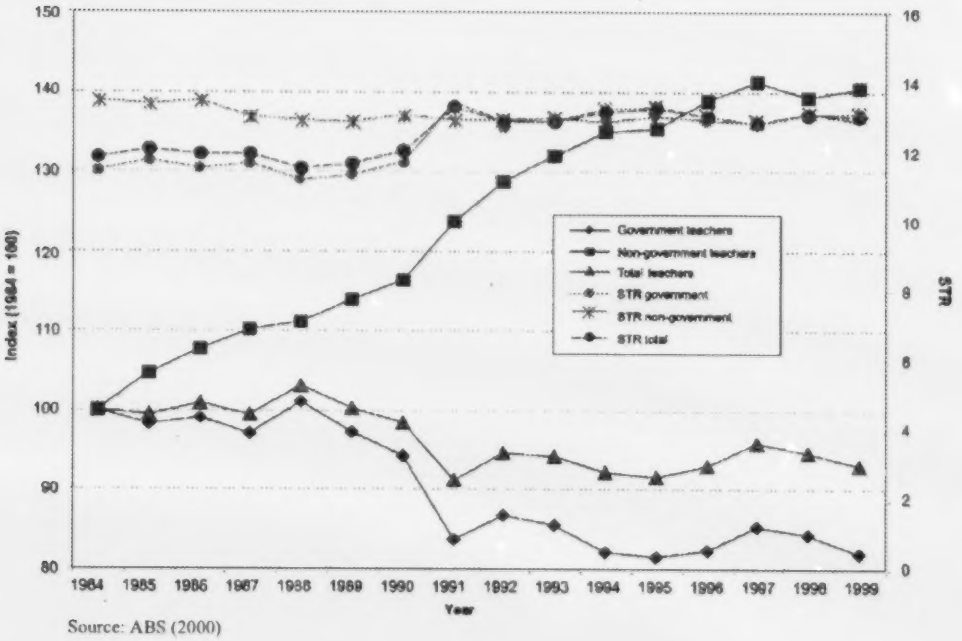
Tasmania secondary

Table 1.12: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	28 636	2 498	11.5	7 749	577	13.4	36 385	3 075	11.8
1986	28 473	2 473	11.5	8 327	621	13.4	36 800	3 094	11.9
1988	28 148	2 523	11.2	8 242	640	12.9	36 390	3 163	11.5
1990	27 468	2 350	11.7	8 709	670	13.0	36 177	3 020	12.0
1991	27 988	2 090	13.4	9 163	713	12.9	37 151	2 803	13.3
1992	27 795	2 164	12.8	9 547	742	12.9	37 342	2 906	12.8
1993	27 347	2 133	12.8	9 816	761	12.9	37 163	2 894	12.8
1994	27 028	2 050	13.2	9 984	779	12.8	37 012	2 829	13.1
1995	26 943	2 032	13.3	10 130	781	13.0	37 073	2 813	13.2
1996	26 679	2 056	13.0	10 296	800	12.9	36 975	2 856	12.9
1997	27 258	2 129	12.8	10 428	815	12.8	37 686	2 944	12.8
1998	27 317	2 102	13.0	10 478	803	13.0	37 795	2 905	13.0
1999	26 636	2 043	13.0	10 380	810	12.8	37 016	2 853	13.0

Source: ABS (2000)

Chart 1.12: Tasmania secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

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Northern Territory

Current labour market for teachers

In 1999 there were 1 770 FTE primary teachers and 1 026 FTE secondary teachers in the Northern Territory (*ABS Schools Australia 4221.0*). From 1984 to 1999 teacher numbers grew steadily, especially in the primary sector. FTE of primary teachers grew by 41 per cent over the period whilst the growth in secondary teachers was comparatively slower at 27 per cent.

Student teacher ratios in primary schools also fell during this period from 16.7 in 1984 to 14.5 in 1999. Secondary school STRs rose in the early 1990s then dropped and have remained relatively constant since then.

Recruitment experience in the government schools sector

Primary

There is some difficulty in filling positions for general classroom teachers in remote areas, and LOTE teachers, mainly Indonesian, in urban centres. There is a shortfall in trained teachers in Special Education.

Secondary

The areas of recruitment difficulty are:

- Languages other than English – the shortfall occurs in urban centres, particularly in respect of Japanese and Indonesian teachers;
- Mathematics – shortages are experienced in the Senior secondary area and in urban areas;
- Science – Senior physics and chemistry positions are hard to fill;
- Technical Studies – the shortfall in this area is as a result of teachers not training in this area and the ageing teaching population;
- Information Technology – Urban Darwin Secondary School is experiencing difficulty in identifying qualified teachers in this subject area;
- Home Economics – The demand for teachers in this area is not great, but these positions are difficult to fill due to the lack of trained and qualified teachers in this area; and
- English as a Second Language (ESL) – there is a shortfall both in the urban and remote areas.

Initiatives taken by the Education Department to address shortages

A number of strategies are being used in the Northern Territory to address shortages:

- Special Education teaching positions have been filled with experienced classroom teachers who have had some experience in dealing with special education students. This is particularly the case in Special Schools;
- The Department advertises nationally when there is a difficult position to fill in a particular area. In addition, contact is made with the Northern Territory University to ascertain if there are any graduating students in this subject area;
- It is also possible to share a teacher between two schools particularly in the Languages other than English area;
- Casual relief or short term contract teachers are employed to cover the vacancy in the first instance;
- Representatives of the Northern Territory Department of Education participate in 'Recruitment Fairs' organised by interstate universities with the view of attracting new graduates;

- The Department offers HECS reimbursement to all employees wishing to undertake further studies; and
- Consideration is being given to retraining teachers in the specialist areas of ESL and special education.

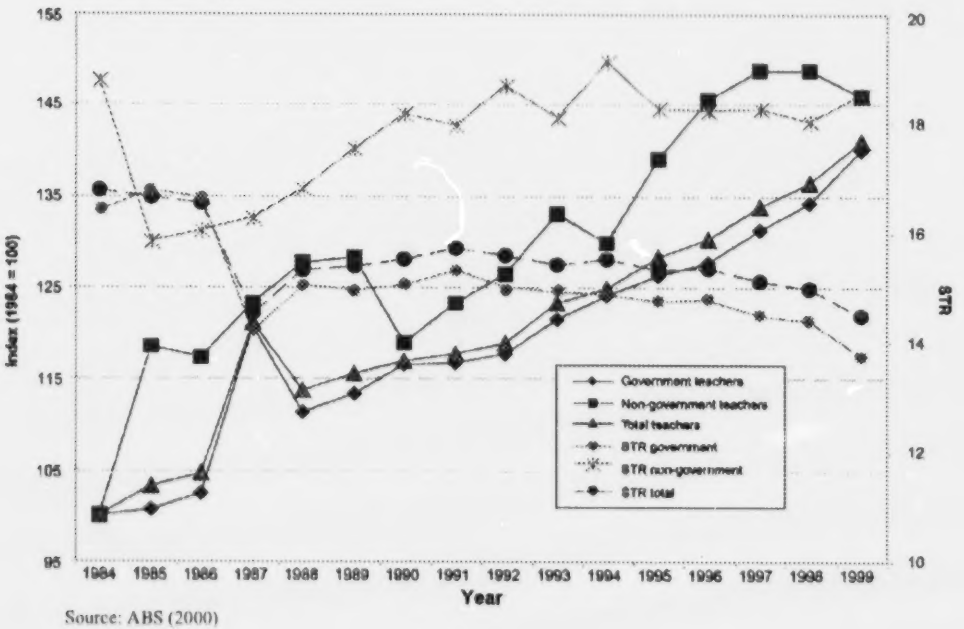
Northern Territory primary

Table 1.13: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	17 571	1 072	16.4	3 471	185	18.8	21 042	1 257	16.7
1986	18 233	1 097	16.6	3 476	217	16.0	21 709	1 314	16.5
1988	17 916	1 193	15.0	3 964	236	16.8	21 880	1 429	15.3
1990	18 746	1 248	15.0	3 992	220	18.1	22 738	1 468	15.5
1991	19 135	1 251	15.3	4 094	228	18.0	23 229	1 479	15.7
1992	18 900	1 261	15.0	4 372	234	18.7	23 272	1 495	15.6
1993	19 400	1 302	14.9	4 445	246	18.1	23 845	1 548	15.4
1994	19 764	1 330	14.9	4 587	240	19.1	24 351	1 570	15.5
1995	19 930	1 353	14.7	4 686	257	18.2	24 616	1 610	15.3
1996	20 203	1 367	14.8	4 899	269	18.2	25 102	1 636	15.3
1997	20 350	1 405	14.5	5 020	275	18.3	25 370	1 680	15.1
1998	20 692	1 439	14.4	4 957	275	18.0	25 649	1 714	15.0
1999	20 626	1 500	13.8	4 998	270	18.5	25 624	1 770	14.5

Source: ABS (2000)

Chart 1.13: Northern Territory primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

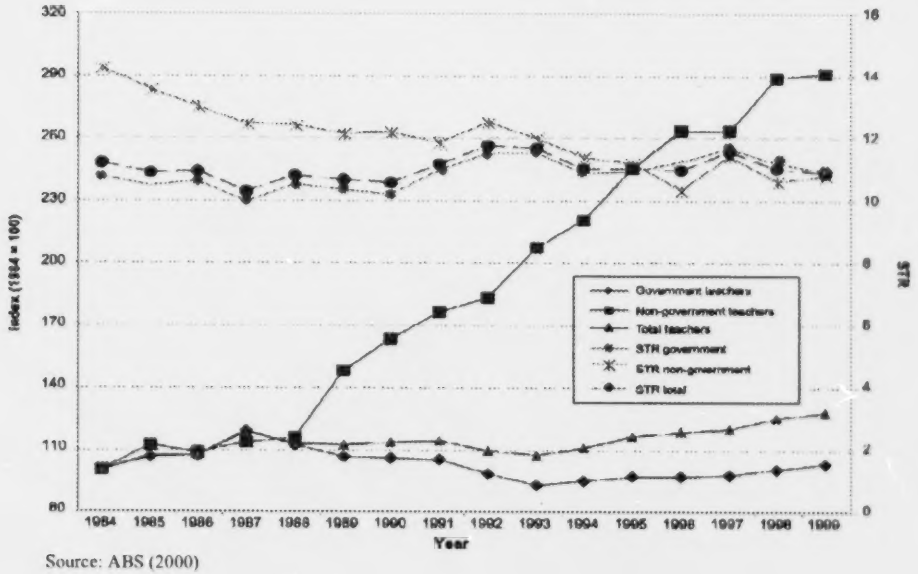
Northern Territory secondary

Table 1.14: Number of full-time students, fte of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	7 523	701	10.7	1 490	105	14.2	9 013	806	11.2
1986	7 922	750	10.6	1 476	114	12.9	9 398	864	10.9
1988	8 233	785	10.5	1 499	121	12.4	9 732	906	10.7
1990	7 510	738	10.2	2 079	171	12.2	9 589	909	10.5
1991	8 026	734	10.9	2 190	185	11.8	10 216	919	11.1
1992	7 903	688	11.5	2 396	192	12.5	10 299	880	11.7
1993	7 437	646	11.5	2 590	217	11.9	10 027	863	11.6
1994	7 170	661	10.8	2 625	231	11.4	9 795	892	11.0
1995	7 350	675	10.9	2 876	257	11.2	10 226	932	11.0
1996	7 563	675	11.2	2 842	276	10.3	10 405	951	10.9
1997	7 944	684	11.6	3 152	276	11.4	11 096	960	11.6
1998	7 852	703	11.2	3 204	303	10.6	11 056	1 006	11.0
1999	7 861	721	10.9	3 282	305	10.8	11 143	1 026	10.9

Source: ABS (2000)

Chart 1.14: Northern Territory secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

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Australian Capital Territory

Labour market background

There were 1793 FTE primary teachers and 2221 FTE secondary teachers in the ACT in 1999 (ABS *Schools, Australia*). Over the period 1984 to 1998 there has been a net increase in the number of teachers in both the primary and secondary sectors. This increase in teacher numbers was confined to the non government sector with teacher numbers in the government sector falling since 1994. The growth in the number of primary teachers was 6 percent (3 percent in the government sector) and in the secondary sector growth rate was 5 percent (negative 8 percent in the government sector).

Student to teacher ratios in the primary sector have declined over the period 1984 to 1999, however there has been an increase in the STR for the secondary sector over this period.

Recruitment experience in the government school sector

Primary

Survey results show that there is an adequate supply of generalist primary school teachers. However, there are recruitment difficulties filling some specialist vacancies - teacher librarian, special education and school counselling. There is also difficulty attracting suitable teachers for casual vacancies.

Secondary

While survey results indicate an adequate supply of secondary teachers, there were difficulties filling mathematics, science, information technology and special education vacancies. School counsellors and teachers with vocation certification are other demand areas. The lack of suitable casual teachers causes concern particularly during the high demand winter months.

Initiatives taken by the Education Department to address shortages

The *Student Internship Program* initiative developed in partnership with the University of Canberra has been success in assisting the Department to retain a higher percentage of recent primary education graduates in the ACT. The program provides opportunities for students in the program to obtain increase practicum time as well as access to paid employment prior to graduation. The program is to be extended to secondary education students during 2001.

The department advertises for teacher recruits in all major metropolitan and national newspapers. In addition, recruitment teams including recent recruits visit all teacher training institutions in all states and territories except WA as well as participating in Recruitment Fairs at these institutions.

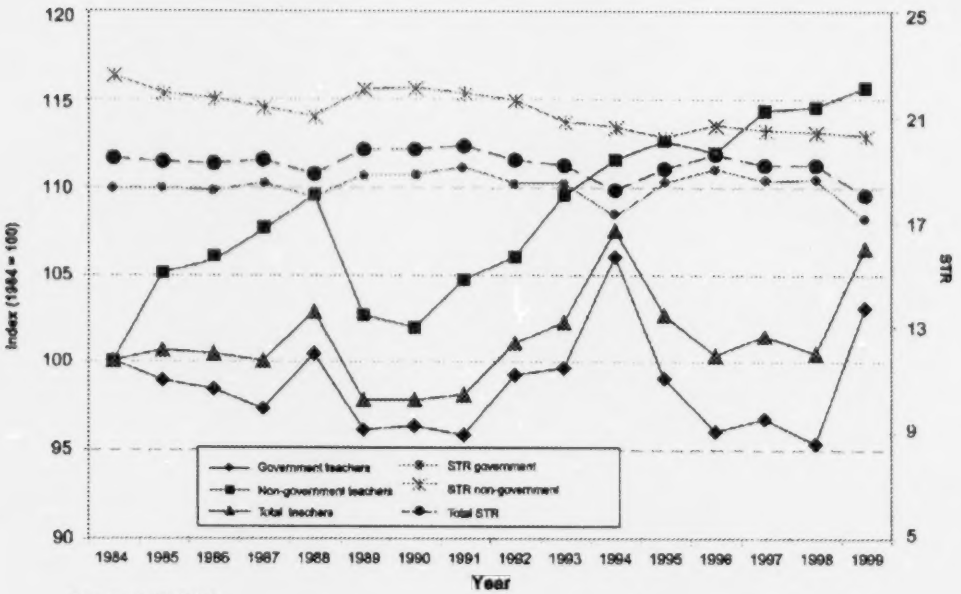
Australian Capital Territory primary

Table 1.15: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	22 420	1 230	18.2	10 252	455	22.5	32 672	1 685	19.4
1986	22 025	1 211	18.2	10 427	481	21.7	32 452	1 692	19.2
1988	22 142	1 235	17.9	10 440	498	21.0	32 582	1 733	18.8
1990	22 275	1 185	18.8	10 221	464	22.0	32 496	1 649	19.7
1991	22 418	1 178	19.0	10 390	476	21.8	32 808	1 654	19.8
1992	22 527	1 221	18.4	10 415	482	21.6	32 942	1 703	19.3
1993	22 583	1 225	18.4	10 339	498	20.8	32 922	1 723	19.1
1994	22 412	1 303	17.2	10 449	507	20.6	32 861	1 810	18.2
1995	22 466	1 218	18.4	10 341	512	20.2	32 807	1 730	19.0
1996	22 431	1 181	19.0	10 509	509	20.6	32 940	1 690	19.5
1997	22 032	1 190	18.5	10 652	520	20.5	32 684	1 710	19.1
1998	21 742	1 172	18.6	10 609	521	20.4	32 351	1 693	19.1
1999	21 606	1 267	17.1	10 651	526	20.2	32 257	1 793	18.0

Source: ABS (2000)

Chart 1.15: Australian Capital Territory primary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

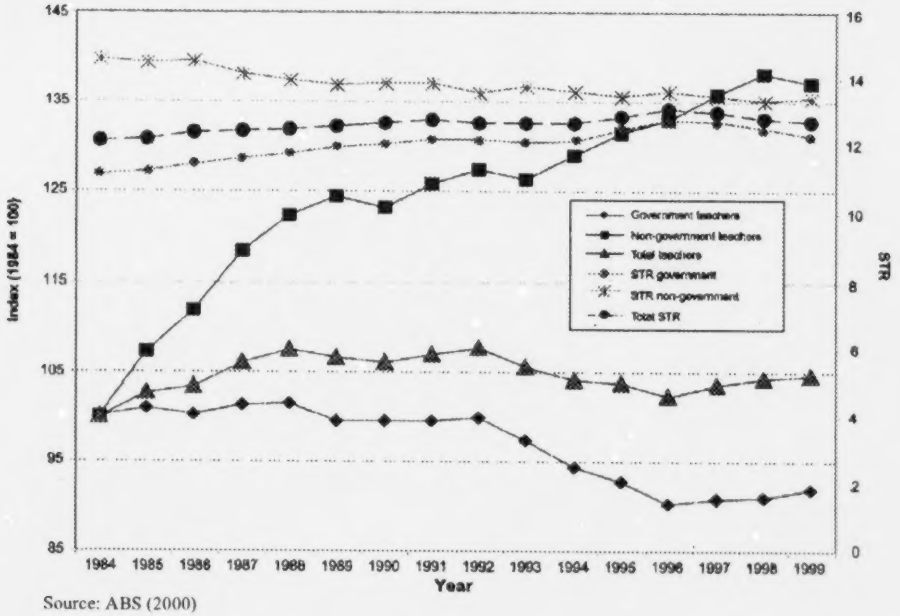
Australian Capital Territory secondary

Table 1.16: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	17 016	1 523	11.2	8 760	601	14.6	25 776	2 124	12.1
1986	17 435	1 524	11.4	9 762	671	14.5	27 197	2 195	12.4
1988	18 203	1 545	11.8	10 272	735	14.0	28 475	2 280	12.5
1990	18 277	1 513	12.1	10 266	740	13.9	28 543	2 253	12.7
1991	18 472	1 514	12.2	10 467	756	13.9	28 939	2 270	12.7
1992	18 567	1 520	12.2	10 400	765	13.6	28 967	2 285	12.7
1993	17 964	1 482	12.1	10 466	759	13.8	28 430	2 241	12.7
1994	17 453	1 435	12.2	10 564	775	13.6	28 017	2 210	12.7
1995	17 654	1 412	12.5	10 647	790	13.5	28 301	2 202	12.9
1996	17 540	1 374	12.8	10 899	799	13.6	28 439	2 173	13.1
1997	17 563	1 381	12.7	10 987	816	13.5	28 550	2 197	13.0
1998	17 347	1 385	12.5	11 067	830	13.3	28 414	2 215	12.8
1999	17 198	1 398	12.3	11 053	823	13.4	28 251	2 221	12.7

Source: ABS (2000)

Chart 1.16: Australian Capital Territory secondary – growth in FTE of teachers and student to teacher ratios 1984 to 1999



Source: ABS (2000)

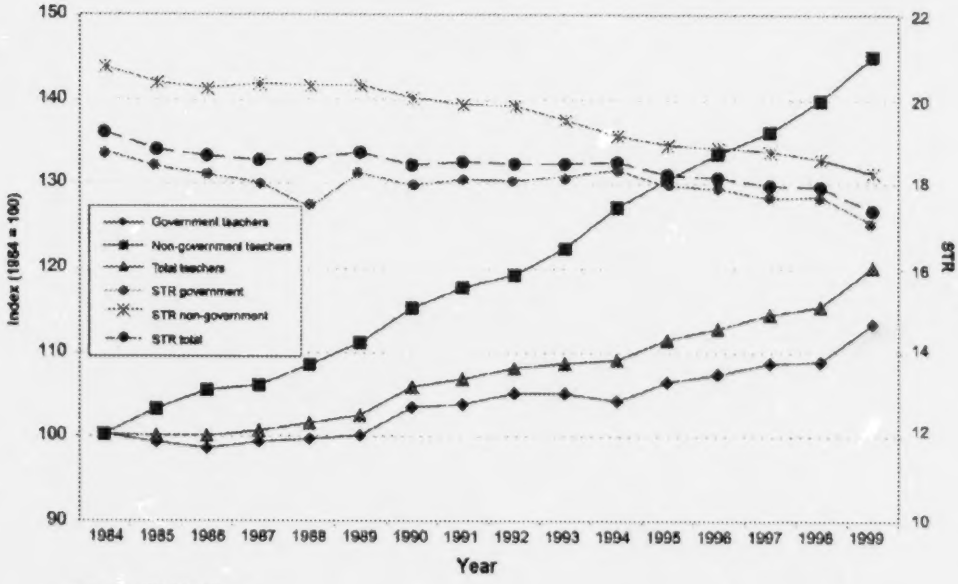
Australia primary

Table 1.17: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	1 341 248	71 590	18.7	398 618	19 218	20.7	1 739 866	90 808	19.2
1986	1 279 817	70 463	18.2	408 841	20 222	20.2	1 688 658	90 685	18.6
1988	1 283 091	71 186	17.4	421 769	20 792	20.3	1 704 860	91 978	18.5
1990	1 322 543	73 837	17.9	440 951	22 079	20.0	1 763 494	95 916	18.4
1991	1 338 533	74 216	18.0	447 913	22 564	19.9	1 786 446	96 780	18.5
1992	1 351 665	75 111	18.0	452 705	22 845	19.8	1 804 370	97 956	18.4
1993	1 359 425	75 066	18.1	456 641	23 460	19.5	1 816 066	98 526	18.4
1994	1 360 771	74 494	18.3	464 969	24 373	19.1	1 825 740	98 867	18.5
1995	1 361 287	75 996	17.9	472 394	25 040	18.9	1 833 681	101 036	18.1
1996	1 367 406	76 677	17.8	480 763	25 590	18.8	1 848 169	102 267	18.1
1997	1 367 007	77 657	17.6	488 782	26 117	18.7	1 855 789	103 774	17.9
1998	1 372 430	77 781	17.6	497 422	26 822	18.5	1 869 852	104 603	17.9
1999	1 378 879	81 036	17.0	506 479	27 829	18.2	1 885 358	108 865	17.3

Source: ABS (2000)

Chart 1.17: Australia primary – growth in FTE of teachers and students to teacher ratios 1984 to 1999



Source: ABS (2000)

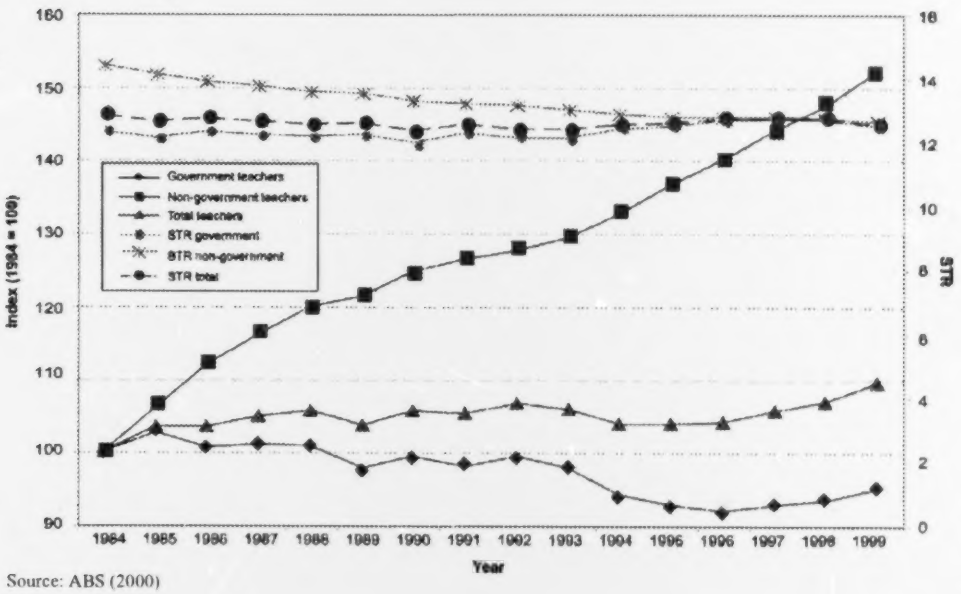
Australia secondary

Table 1.18: Number of full-time students, FTE of teachers and student to teacher ratios for government and non-government sectors

	Government			Non-government			Total		
Year	Students	Teachers	STR	Students	Teachers	STR	Students	Teachers	STR
1984	900 002	73 087	12.3	353 436	24 579	14.4	1 253 438	97 666	12.8
1986	907 691	73 626	12.3	381 766	27 489	13.9	1 289 457	101 115	12.8
1988	896 406	73 674	12.2	400 235	29 497	13.6	1 296 641	103 171	12.6
1990	870 804	72 640	12.0	407 359	30 658	13.3	1 278 163	103 298	12.4
1991	878 693	71 679	12.3	409 998	31 074	13.2	1 288 691	102 753	12.5
1992	882 418	72 734	12.1	412 178	31 376	13.1	1 294 596	104 110	12.4
1993	868 631	71 571	12.1	413 678	31 814	13.0	1 282 309	103 385	12.4
1994	854 167	68 886	12.4	419 473	32 592	12.9	1 273 640	101 478	12.6
1995	846 566	67 791	12.5	429 090	33 574	12.8	1 275 656	101 365	12.6
1996	854 151	67 272	12.7	440 695	34 433	12.8	1 294 846	101 705	12.7
1997	863 045	67 879	12.7	452 790	35 406	12.8	1 315 835	103 285	12.7
1998	866 945	68 251	12.7	461 858	36 226	12.7	1 328 803	104 477	12.7
1999	868 795	69 447	12.5	472 497	37 413	12.6	1 341 292	106 860	12.6

Source: ABS (2000)

Chart 1.18: Australia secondary – growth in FTE of teachers and students to teacher ratios 1984 to 1999



Source: ABS (2000)

ATTACHMENT 2 – PAST STUDENT ENROLMENT – 1995 TO 1999

	1995				1999				% change 1995 to 1999			
	Primary	Junior Secondary	Senior Secondary	Total	Primary	Junior Secondary	Senior Secondary	Total	Primary	Junior Secondary	Senior Secondary	Total
Government												
NSW	448 325	222 727	76 622	755 252	455 008	220 825	78 532	763 169	1.5	-0.9	2.5	1.0
VIC	301 515	149 982	59 842	514 805	310 218	151 333	60 027	524 849	2.9	0.9	0.3	2.0
QLD	264 567	94 119	45 410	405 550	273 710	98 271	52 170	425 876	3.5	4.4	14.9	5.0
WA	145 561	52 011	25 888	223 091	144 746	54 839	27 324	227 232	-0.6	5.4	8.9	1.9
SA	122 582	37 341	17 436	178,471	116 647	39 314	19 002	176 303	-4.8	5.3	9.0	-1.2
TAS	36 341	20 406	6 394	63 284	36 318	18 865	7 771	62 954	-0.1	-7.6	21.5	-0.5
NT	19 930	4 125	2 075	27 280	20 626	4 267	2 171	28 487	3.5	3.4	4.6	4.4
ACT	22 466	11 173	6 425	40 120	21 606	10 597	6 563	38 804	-3.8	-5.2	2.1	-3.3
Australia	*1 361 287*	*591 884*	*239 292*	*2 207 853*	*1 378 879*	*598 311*	*253 560*	*2 247 674*	*1.3*	*1.1*	*6.0*	*1.8*
Non-government												
NSW	157 734	101 957	40 428	300 614	168 618	112 557	44 612	326 423	6.9	10.4	10.3	8.6
VIC	130 096	86 638	38 216	255 472	136 787	92 027	40 546	269 705	5.1	6.2	6.1	5.6
QLD	77 377	47 077	25 693	150 562	85 278	51 926	31 098	168 708	10.2	10.3	21.0	12.1
WA	41 560	24 015	12 638	78 590	46 677	27 524	14 928	89 377	12.3	14.6	18.1	13.7
SA	39 355	17 184	9 708	66 321	42 991	19 480	11 356	73 920	9.2	13.4	17.0	11.5
TAS	11 245	7 663	2 460	21 375	10 479	7 500	2 877	20 859	-6.8	-2.1	17.0	-2.4
NT	4 686	1 854	549	7 562	4 998	2 060	617	8 280	6.7	11.1	12.4	9.5
ACT	10 341	8 018	2 629	20 988	10 651	8 211	2 835	21 704	3.0	2.4	7.8	3.4
Australia	*472 394*	*294 406*	*132 321*	*901 484*	*506 479*	*321 285*	*148 869*	*978 976*	*7.2*	*9.1*	*12.5*	*8.6*
Total												
NSW	606 059	324 684	117 050	1 055 866	623 626	333 382	123 144	1 089 592	2.9	2.7	5.2	3.2
VIC	431 611	236 620	98 058	770 277	447 005	243 360	100 573	794 554	3.6	2.8	2.6	3.2
QLD	341 944	141 196	71 103	556 112	358 988	150 197	83 268	594 584	5.0	6.4	17.1	6.9
WA	187 121	76 026	37 726	301 681	191 423	82 363	42 252	316 609	2.3	8.3	12.0	4.9
SA	161 937	54 525	27 144	244 792	159 638	58 794	30 358	250 223	-1.4	7.8	11.8	2.2
TAS	47 586	28 069	8 854	84 659	46 797	26 365	10 648	83 813	-1.7	-6.1	20.3	-1.0
NT	24 616	5 979	2 624	34 842	25 624	6 327	2 788	36 767	4.1	5.8	6.3	5.5
ACT	32 807	19 191	9 054	61 108	32 257	18 808	9 398	60 508	-1.7	-2.0	3.8	-1.0
Australia	*1 833 681*	*886 290*	*371 613*	*3 109 337*	*1 885 358*	*919 596*	*402 429*	*3 226 650*	*2.8*	*3.8*	*8.3*	*3.8*

Source: ABS (2000)

Note: The total column includes secondary students who are "ungraded" and therefore not included in the junior not senior secondary columns.

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ATTACHMENT 3 – PROJECTED STUDENT ENROLMENT 2000 TO 2004

	2000				2004				% change 1995 to 1999			
	Primary	Junior Secondary	Senior Secondary	Total	Primary	Junior Secondary	Senior Secondary	Total	Primary	Junior Secondary	Senior Secondary	Total
Government												
NSW	456 312	218 390	78 382	753 084	452 027	221 396	74 924	748 347	–0.9	1.4	–4.4	–0.6
VIC	312 570	151 147	60 223	523 940	309 449	155 187	60 351	524 986	–1.0	2.7	0.2	0.2
QLD	277 810	97 787	52 804	428 401	287 939	103 104	51 999	443 042	3.6	5.4	–1.5	3.4
WA	145 223	54 340	28 280	227 844	146 349	53 952	26 475	226 776	0.8	–0.7	–6.4	–0.5
SA	115 956	38 845	19 644	174 445	112 243	37 261	19 010	168 514	–3.2	–4.1	–3.2	–3.4
TAS	36 444	18 079	8 153	62 677	34 029	18 650	6 554	59 233	–6.6	3.2	–19.6	–5.5
NT	20 657	4 227	2 210	27 094	20 353	4 378	2 138	26 869	–1.5	3.6	–3.3	–0.8
ACT	21 463	10 454	6 434	38 351	20 743	9 941	5 806	36 490	–3.4	–4.9	–9.8	–4.9
Australia	*1 386 434*	*593 271*	*256 131*	*2 235 837*	*1 383 131*	*603 870*	*247 257*	*2 234 258*	*–0.2*	*1.8*	*–3.5*	*–0.1*
Non-government												
NSW	172 251	115 462	45 606	333 319	179 560	127 519	50 431	357 509	4.2	10.4	10.6	7.3
VIC	138 275	93 261	41 154	272 690	136 479	100 233	43 409	280 122	–1.3	7.5	5.5	2.7
QLD	87 855	52 793	31 752	172 399	94 986	59 843	33 747	188 577	8.1	13.4	6.3	9.4
WA	47 365	28 438	15 312	91 115	49 202	31 954	17 450	98 606	3.9	12.4	14.0	8.2
SA	43 390	19 377	11 630	74 397	43 405	20 141	11 534	75 079	0.0	3.9	–0.8	0.9
TAS	10 330	7 250	2 917	20 497	9 293	6 859	2 618	18 770	–10.0	–5.4	–10.3	–8.4
NT	5 083	1 924	587	7 594	5 026	2 169	521	7 716	–1.1	12.7	–11.2	1.6
ACT	10 687	8 247	2 729	21 663	10 342	8 678	2 753	21 773	–3.2	5.2	0.9	0.5
Australia	*515 235*	*326 752*	*151 686*	*993 673*	*528 294*	*357 396*	*162 463*	*1 048 153*	*2.5*	*9.4*	*7.1*	*5.5*
Total												
NSW	628 563	333 851	123 988	1 086 402	631 587	348 915	125 355	1 105 857	0.5	4.5	1.1	1.8
VIC	450 845	244 408	101 377	796 630	445 928	255 420	103 760	805 108	–1.1	4.5	2.4	1.1
QLD	365 665	150 581	84 555	600 801	382 925	162 947	85 747	631 619	4.7	8.2	1.4	5.1
WA	192 588	82 779	43 593	318 959	195 551	85 906	43 925	325 382	1.5	3.8	0.8	2.0
SA	159 346	58 222	31 274	248 842	155 648	57 402	30 543	243 594	–2.3	–1.4	–2.3	–2.1
TAS	46 774	25 329	11 070	83 174	43 323	25 510	9 171	78 004	–7.4	0.7	–17.2	–6.2
NT	25 739	6 151	2 797	34 688	25 379	6 547	2 659	34 585	–1.4	6.4	–4.9	–0.3
ACT	32 149	18 702	9 163	60 014	31 085	18 619	8 559	58 263	–3.3	–0.4	–6.6	–2.9
Australia	*1 901 670*	*920 022*	*407 818*	*3 229 510*	*1 911 425*	*961 266*	*409 720*	*3 282 411*	*0.5*	*4.5*	*0.5*	*1.6*

Source: DETYA (2000,d)

ATTACHMENT 4 – PROJECTED NUMBER OF TEACHERS (FTE) TO 2003

	Primary					
	1998	1999	2000	2001	2002	2003
Government						
NSW	25 458	25 689	25 201	25 168	24 999	24 749
VIC	16 882	18 060	18 205	18 565	18 540	18 440
QLD	17 869	18 924	19 138	19 416	19 684	19 581
SA	6 883	6 895	6 914	6 796	6 636	6 465
WA	9 102	9 396	9 368	10 530	9 904	10 401
TAS	2 173	2 201	2 395	2 422	2 419	2 409
NT	1 426	1 483	1 499	1 531	1 564	1 596
ACT	1 382	1 372	1 366	1 360	1 355	1 345
Australia	*81 175*	*84 020*	*84 086*	*85 788*	*85 101*	*84 986*
Non Government						
NSW	8 719	9 073	9 269	9 418	9 519	9 607
VIC	7 212	7 495	7 577	7 581	7 600	7 551
QLD	4 609	4 783	4 928	5 062	5 169	5 246
SA	2 303	2 383	2 405	2 420	2 424	2 422
WA	2 583	2 713	2 754	2 792	2 823	2 841
TAS	587	586	577	566	551	532
NT	275	270	275	275	277	275
ACT	521	526	529	527	523	516
Australia	*26 809*	*27 829*	*28 312*	*28 639*	*28 886*	*28 991*
Total Primary						
NSW	34 177	34 762	34 470	34 586	34 518	34 356
VIC	24 094	25 555	25 782	26 146	26 140	25 991
QLD	22 478	23 707	24 066	24 478	24 853	24 827
SA	9 186	9 278	9 319	9 216	9 060	8 887
WA	11 685	12 109	12 122	13 322	12 727	13 242
TAS	2 760	2 787	2 972	2 988	2 970	2 941
NT	1 701	1 753	1 774	1 806	1 841	1 871
ACT	1 903	1 898	1 895	1 887	1 878	1 861
Australia	*107 984*	*111 849*	*112 398*	*114 428*	*113 987*	*113 977*

ATTACHMENT 4 – PROJECTED NUMBER OF TEACHERS (FTE) TO 2003 (CONTINUED)

	Secondary					
	1998	**1999**	**2000**	**2001**	**2002**	**2003**
Government						
NSW	24 310	24 419	24 125	23 871	23 656	23 458
VIC	16 881	17 097	17 260	17 360	17 335	17 420
QLD	12 382	12 569	12 896	12 877	13 017	13 253
SA	5 268	5 012	5 030	5 002	4 972	4 933
WA	6 726	6 916	6 739	6 755	6 783	6 832
TAS	1 952	1 912	2 035	1 983	1 960	1 948
NT	608	634	641	655	669	683
ACT	1 368	1 374	1 364	1 360	1 360	1 355
Australia	69 495	69 933	70 090	69 863	69 752	69 882
Non Government						
NSW	12 215	12 660	12 822	13 090	13 358	13 625
VIC	10 419	10 708	10 656	10 769	10 883	10 996
QLD	6 057	6 326	6 349	6 533	6 716	6 900
SA	2 350	2 430	2 388	2 433	2 479	2 524
WA	3 249	3 351	3 496	3 605	3 714	3 823
TAS	803	810	858	875	892	909
NT	303	305	323	337	352	367
ACT	830	823	832	855	884	901
Australia	*36 226*	*37 413*	*37 722*	*38 497*	*39 277*	*40 047*
Total secondary						
NSW	36 525	37 079	36 947	36 961	37 014	37 083
VIC	27 300	27 805	27 916	28 129	28 218	28 416
QLD	18 439	18 895	19 245	19 410	19 733	20 153
SA	7 618	7 442	7 418	7 435	7 451	7 457
WA	9 975	10 267	10 235	10 360	10 497	10 655
TAS	2 755	2 722	2 893	2 858	2 852	2 857
NT	911	939	964	992	1 021	1 050
ACT	2 198	2 197	2 196	2 215	2 244	2 256
Australia	*105 721*	*107 346*	*107 812*	*108 360*	*109 029*	*109 929*

Note: figure for 1998 and 1999 are actual. Figures for 2000 and beyond are projections.
Source: (1) – Government numbers have been supplied direct from the DETYA 2000 survey.
(2) – Non-government numbers are estimated by DETYA.

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ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999

	Commencing Year										
POSTGRADUATE	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Early Childhood Teacher Education											
NSW	0	0	0	0	0	0	0	0	0	0	0
VIC	30	15	0	0	0	9	4	1	40	88	48
QLD	23	29	24	29	25	43	54	86	74	85	18
WA	0	0	0	0	0	32	36	27	63	60	70
SA	0	14	21	0	0	0	0	0	0	0	0
TAS	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	0	0	0	0
ACT	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*53*	*58*	*45*	*29*	*25*	*84*	*94*	*114*	*177*	*233*	*136*
Initial Primary Teacher Education											
NSW	68	0	0	0	55	84	214	204	235	141	103
VIC	0	0	25	22	26	39	59	50	65	62	69
QLD	129	93	159	45	39	83	97	140	148	157	0
WA	79	72	117	45	50	64	86	102	148	146	174
SA	16	0	0	0	0	0	0	0	0	0	0
TAS	0	0	0	0	0	0	0	0	0	0	0
NT	17	6	13	8	0	0	0	0	0	13	31
ACT	0	18	14	0	1	0	0	0	0	0	1
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*309*	*189*	*328*	*120*	*171*	*270*	*456*	*496*	*596*	*519*	*378*

ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999 (CONTINUED)

	Commencing Year										
POSTGRADUATE	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Secondary Teacher Education											
NSW	520	98	180	192	531	841	1018	937	935	968	847
VIC	1039	1063	1169	795	755	799	681	433	579	657	786
QLD	384	444	514	484	488	408	413	551	717	598	9
WA	208	217	261	207	231	211	235	212	219	262	294
SA	64	66	4	0	0	0	0	0	0	0	0
TAS	0	0	0	0	0	0	0	0	0	0	0
NT	10	17	20	33	23	20	27	6	32	15	0
ACT	78	65	73	79	92	75	89	94	126	108	75
Multi-State	0	0	0	180	160	152	231	197	275	308	215
Australia	*2303*	*1970*	*2221*	*1970*	*2280*	*2506*	*2694*	*2430*	*2883*	*2916*	*2226*
Initial Teacher Education (General)											
NSW	2	109	504	387	378	249	3	1	8	2	149
VIC	415	388	443	299	255	16	16	179	180	152	171
QLD	0	117	0	1	0	0	0	0	23	8	0
WA	0	0	0	0	0	0	0	0	0	0	179
SA	0	0	0	0	0	0	0	0	0	0	0
TAS	80	57	82	78	86	83	112	94	0	0	0
NT	0	0	0	0	0	0	0	0	0	0	0
ACT	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*497*	*671*	*1029*	*765*	*719*	*348*	*131*	*274*	*211*	*162*	*499*
All Postgraduate Teacher Education											
NSW	590	207	684	579	964	1 174	1 235	1 142	1 178	1 111	1 099
VIC	1 484	1 466	1 637	1 116	1 036	863	760	663	864	959	1 074
QLD	536	683	697	559	552	534	564	777	962	848	27
WA	287	289	378	252	281	307	357	341	430	468	717
SA	80	80	25	0	0	0	0	0	0	0	0
TAS	80	57	82	78	86	83	112	94	0	0	0
NT	27	23	33	41	23	20	27	6	32	28	31
ACT	78	83	87	79	93	75	89	94	126	108	76
Multi-State	0	0	0	180	160	152	231	197	275	308	215
Australia	*3 162*	*2 888*	*3 623*	*2 884*	*3 195*	*3 208*	*3 375*	*3 314*	*3 867*	*3 830*	*3 239*

Source: DETYA, (2000, a)

ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999 (CONTINUED)

	Commencing Year										
UNDERGRADUATE	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Early Childhood Teacher Education											
NSW	645	662	711	813	723	721	993	1018	770	840	810
VIC	362	339	392	347	353	291	229	286	245	276	251
QLD	219	283	243	184	183	334	382	350	432	414	584
WA	163	176	156	144	140	128	150	122	125	194	255
SA	136	125	103	118	130	125	157	168	192	205	225
TAS	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	20	138	86	145	46	2
ACT	33	41	70	33	27	45	55	53	56	61	60
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*1 558*	*1 626*	*1 675*	*1 639*	*1 556*	*1 664*	*2 104*	*2 083*	*1 965*	*2 036*	*2 187*
Initial Primary Teacher Education											
NSW	2 006	1 898	2 127	1 345	1 264	1 283	1 431	1 341	1 102	1 454	1 601
VIC	1 980	2 156	2 142	1 299	1 326	1 081	1 008	1 101	1 114	1 076	1 128
QLD	1 604	1 849	1 493	781	816	733	1 104	1 308	1 625	1 623	1 827
WA	708	769	760	578	539	580	589	153	219	595	656
SA	653	659	753	500	499	520	574	575	680	548	542
TAS	157	161	0	0	0	0	0	0	0	0	0
NT	146	107	330	217	64	0	0	0	0	62	102
ACT	212	196	199	94	124	89	88	115	115	171	161
Multi-State	0	0	0	532	786	399	330	342	486	461	473
Australia	*7 466*	*7 795*	*7 804*	*5 346*	*5 418*	*4 685*	*5 124*	*4 935*	*5 341*	*5 990*	*6 490*

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ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999 (CONTINUED)

	Commencing Year										
UNDERGRADUATE	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Secondary Teacher Education											
NSW	1 492	1 627	1 645	1 417	1 299	1 090	977	1 069	1 153	954	1 253
VIC	1 221	1 286	1 430	1 078	940	603	702	742	775	793	593
QLD	774	817	783	772	797	803	663	528	1 028	1 033	1 401
WA	534	507	553	464	418	322	371	763	765	283	265
SA	338	228	152	170	173	176	144	171	52	31	53
TAS	1	0	0	0	0	0	0	0	0	0	0
NT	0	1	0	1	0	0	0	0	0	0	0
ACT	50	82	81	77	73	75	80	84	107	101	36
Multi-State	0	0	0	236	193	175	200	139	138	174	162
Australia	*4 410*	*4 548*	*4 644*	*4 215*	*3 893*	*3 244*	*3 137*	*3 496*	*4 018*	*3 369*	*3 763*
Initial Teacher Education (General)											
NSW	185	0	54	79	107	206	163	562	694	613	652
VIC	149	139	196	116	107	2	3	14	203	230	380
QLD	0	0	101	73	86	5	0	1	45	96	67
WA	70	96	122	162	193	143	0	0	0	0	17
SA	0	0	0	0	0	0	0	0	0	0	130
TAS	73	84	278	281	225	200	243	276	426	369	431
NT	0	0	0	0	51	79	1	207	193	18	47
ACT	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*477*	*269*	*751*	*711*	*769*	*635*	*410*	*1 060*	*1 561*	*1 326*	*1 724*
All Undergraduate Teacher Education											
NSW	4 328	4 187	4 537	3 654	3 393	3 300	3 564	3 990	3 719	3 861	4 316
VIC	3 712	3 920	4 160	2 840	2 726	1 977	1 942	2 143	2 337	2 375	2 352
QLD	2 597	2 949	2 620	1 810	1 882	1 875	2 149	2 187	3 130	3 166	3 879
WA	1 475	1 498	1 591	1 348	1 290	1 173	1 110	1 038	1 109	1 072	1 193
SA	1 127	1 012	1 008	788	802	821	875	914	924	784	950
TAS	231	245	278	281	225	200	243	276	426	369	431
NT	146	108	330	218	115	99	139	293	338	126	151
ACT	295	319	350	204	224	209	223	252	278	333	257
Australia	*13 911*	*14 238*	*14 874*	*11 911*	*11 636*	*10 228*	*10 775*	*11 574*	*12 885*	*12 721*	*14 164*

Source: DETYA, (2000, a).

ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999 (CONTINUED)

	Commencing Year										
ALL STUDENTS	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Early Childhood Teacher Education											
NSW	645	662	711	813	723	721	993	1018	770	840	810
VIC	392	354	392	347	353	300	233	287	285	364	299
QLD	242	312	267	213	208	377	436	436	506	499	602
WA	163	176	156	144	140	160	186	149	188	254	325
SA	136	139	124	118	130	125	157	168	192	205	225
TAS	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	20	138	86	145	46	2
ACT	33	41	70	33	27	45	55	53	56	61	60
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*1 611*	*1 684*	*1 720*	*1 668*	*1 581*	*1 748*	*2 198*	*2 197*	*2 142*	*2 269*	*2 323*
Initial Primary Teacher Education											
NSW	2 074	1 898	2 127	1 345	1 319	1 367	1 645	1 545	1 337	1 595	1 704
VIC	1 980	2 156	2 167	1 321	1 352	1 120	1 067	1 151	1 179	1 138	1 197
QLD	1 733	1 942	1 652	826	855	816	1 201	1 448	1 773	1 780	1 827
WA	787	841	877	623	589	644	675	255	367	741	830
SA	669	659	753	500	499	520	574	575	680	548	542
TAS	157	161	0	0	0	0	0	0	0	0	0
NT	163	113	343	225	64	0	0	0	0	75	133
ACT	212	214	213	94	125	89	88	115	115	171	162
Multi-State	0	0	0	532	786	399	330	342	486	461	473
Australia	*7 775*	*7 984*	*8 132*	*5 466*	*5 589*	*4 955*	*5 580*	*5 431*	*5 937*	*6 509*	*6 868*

ATTACHMENT 5 – COMMENCEMENTS OF POSTGRADUATE AND UNDERGRADUATE TEACHING COURSES 1998 TO 1999 (CONTINUED)

	Commencing Year										
ALL STUDENTS	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Initial Secondary Teacher Education											
NSW	2 012	1 725	1 825	1 609	1 830	1 931	1 995	2 006	2 088	1 922	2 100
VIC	2 260	2 349	2 599	1 873	1 695	1 402	1 383	1 175	1 354	1 450	1 379
QLD	1 158	1 261	1 297	1 256	1 285	1 211	1 076	1 079	1 745	1 631	1 410
WA	742	724	814	671	649	533	606	975	984	545	559
SA	402	294	156	170	173	176	144	171	52	31	53
TAS	1	0	0	0	0	0	0	0	0	0	0
NT	10	18	20	34	23	20	27	6	32	15	0
ACT	128	147	154	156	165	150	169	178	233	209	111
Multi-State	0	0	0	416	353	327	431	336	413	482	377
Australia	*6 713*	*6 518*	*6 865*	*6 185*	*6 173*	*5 750*	*5 831*	*5 926*	*6 901*	*6 285*	*5 989*
Initial Teacher Education (General)											
NSW	187	109	558	466	485	455	166	563	702	615	801
VIC	564	527	639	415	362	18	19	193	383	382	551
QLD	0	117	101	74	86	5	0	1	68	104	67
WA	70	46	122	162	193	143	0	0	0	0	196
SA	0	0	0	0	0	0	0	0	0	0	130
TAS	153	141	360	359	311	283	355	370	426	369	431
NT	0	0	0	0	51	79	1	207	193	18	47
ACT	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia	*974*	*940*	*1 780*	*1 476*	*1 488*	*983*	*541*	*1 334*	*1 772*	*1 488*	*2 223*
All commencements											
NSW	4 918	4 394	5 221	4 233	4 357	4 474	4 799	5 132	4 897	4 972	5 415
VIC	5 196	5 386	5 797	3 956	3 762	2 840	2 702	2 806	3 201	3 334	3 426
QLD	3 133	3 632	3 317	2 369	2 434	2 409	2 713	2 964	4 092	4 014	3 906
WA	1 762	1 787	1 969	1 600	1571	1 480	1 467	1 379	1 539	1 540	1 910
SA	1 207	1 092	1 033	788	802	821	875	914	924	784	950
TAS	311	302	360	359	311	283	355	370	426	369	431
NT	173	131	363	259	138	119	166	299	370	154	182
ACT	373	402	437	283	317	284	312	346	404	441	333
Multi-State	0	0	0	948	1 139	726	761	678	899	943	850
Australia	*17 073*	*17 126*	*18 497*	*14 795*	*14 831*	*13 436*	*14 150*	*14 888*	*16 752*	*16 551*	*17 403*

Source: DETYA, (2000, a)

ATTACHMENT 6 –COMPLETIONS FROM POSTGRADUATE AND UNDERGRADUATE INITIAL TEACHER TRAINING COURSES, 1988 TO 1998

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Initial Early Childhood Teacher Education											
NSW	277	295	401	421	434	527	477	467	456	499	561
VIC	165	212	279	241	292	205	185	173	149	155	212
QLD	129	161	156	225	265	151	199	212	202	247	337
WA	98	100	119	118	136	120	137	104	123	197	115
SA	94	81	83	88	21	80	88	38	69	64	78
TAS	31	17	1	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	0	0	1	1	52	41
ACT	40	33	25	26	25	23	39	25	20	20	32
Multi-State	0	0	0	0	0	0	0	0	0	0	0
Australia											
Initial Primary Teacher Education											
NSW	1 337	1 458	1 291	1 673	1 276	1 434	1 195	1 122	1 063	1 195	1 346
VIC	1 350	1 519	1 443	1 302	1 125	1 173	937	846	453	598	663
QLD	1 077	1 126	1 081	1 314	984	744	585	545	511	470	745
WA	487	486	480	567	542	529	426	459	411	471	192
SA	475	478	435	411	343	410	416	362	407	234	307
TAS	27	19	72	14	14	14	11	11	4	8	19
NT	55	97	93	40	76	28	0	0	0	0	0
ACT	158	172	190	151	58	79	73	58	62	54	43
Multi-State	0	0	0	0	651	616	448	310	219	356	194
Australia											

ATTACHMENT 6 –COMPLETIONS FROM POSTGRADUATE AND UNDERGRADUATE INITIAL TEACHER TRAINING COURSES, 1988 TO 1998 (CONTINUED)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Initial Secondary Teacher Education											
NSW	1 505	1 412	904	1 182	944	1 297	1 461	1 541	1 297	1 507	1 555
VIC	1 897	1 835	1 695	1 729	1 361	1 617	1 487	1 221	993	994	1016
QLD	941	902	894	924	594	867	740	746	868	949	957
WA	436	462	499	476	460	469	384	370	373	382	325
SA	290	300	301	127	153	90	99	95	100	118	130
TAS	62	87	20	8	1	0	0	0	0	0	0
NT	5	7	16	16	26	18	17	23	14	20	18
ACT	140	106	84	108	109	108	105	115	132	182	152
Multi-State	0	0	0	0	338	324	272	316	283	318	351
Australia											
Initial Teacher Education (General)											
NSW	254	90	178	239	333	362	295	118	187	209	217
VIC	446	353	362	478	394	3	4	18	199	201	165
QLD	0	0	1	76	84	95	45	36	20	41	19
WA	0	0	0	0	0	0	0	0	0	0	0
SA	0	0	0	0	0	0	0	0	0	0	0
TAS	136	131	89	201	208	248	326	284	266	128	243
NT	0	0	0	0	0	41	34	34	29	9	1
ACT	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	16
Australia											
All completions											
NSW	3 373	3 255	2 774	3 515	2 987	3 620	3 428	3 248	3 003	3 409	3 679
VIC	3 858	3 919	3 779	3 750	3 172	2 998	2 613	2 258	1 794	1 948	2 056
QLD	2 147	2 189	2 132	2 539	1 927	1 857	1 569	1 539	1 601	1 707	2 058
WA	1 021	1 048	1 098	1 161	1 138	1 118	947	933	907	1 050	632
SA	859	859	819	626	517	580	603	495	576	416	515
TAS	256	254	182	223	223	262	337	295	270	136	262
NT	60	104	109	56	102	87	51	58	44	81	60
ACT	338	311	299	285	192	210	217	198	214	256	227
Multi-State	0	0	0	0	989	940	720	626	502	674	561
Australia	*11 912*	*11 939*	*11 192*	*12 155*	*11 247*	*11 672*	*10 485*	*9 650*	*8 911*	*9 678*	*10 050*

Source: DETYA, (2000, a).

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ATTACHMENT 7 - PROJECTIONS OF COMPLETIONS, GRADUATE AND POSTGRADUATE TEACHERS – 1999 TO 2003

	Postgraduate					Undergraduate					Total				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Initial Early Childhood Teacher Education															
NSW	0	0	0	0	0	596	611	462	504	486	596	611	462	504	486
VIC	75	41	31	31	31	137	172	147	166	151	212	212	178	196	181
QLD	72	15	54	54	54	229	210	259	248	350	302	225	313	302	404
WA	51	60	44	44	44	90	73	75	116	153	141	133	119	160	197
SA	0	0	0	0	0	94	101	115	123	135	94	101	115	123	135
TAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	0	0	0	83	52	87	28	1	83	52	87	28	1
ACT	0	0	0	0	0	33	32	34	37	36	33	32	34	37	36
Multi-State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Australia	*198*	*116*	*128*	*128*	*128*	*1 262*	*1 250*	*1 179*	*1 222*	*1 312*	*1 461*	*1 365*	*1 307*	*1 350*	*1 440*
Initial Primary Teacher Education															
NSW	120	88	152	152	152	859	805	661	872	961	979	892	814	1 025	1 113
VIC	53	59	52	52	52	605	661	668	646	677	658	719	720	697	729
QLD	133	0	92	92	92	662	785	975	974	1096	796	785	1067	1066	1 188
WA	124	148	112	112	112	353	92	131	357	394	478	240	243	469	505
SA	0	0	0	0	0	344	345	408	329	325	344	345	408	329	325
TAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NT	11	26	7	7	7	0	0	0	37	61	11	26	7	45	69
ACT	0	1	0	0	0	53	69	69	103	97	53	70	69	103	97
Multi-State	0	0	0	0	0	198	205	292	277	284	198	205	292	277	284
Australia	*441*	*321*	*416*	*416*	*416*	*3 074*	*2 961*	*3 205*	*3 594*	*3 894*	*3 516*	*3 282*	*3 620*	*4 010*	*4 310*
Initial Secondary Teacher Education															
NSW	823	720	800	800	800	586	641	692	572	752	1 409	1 361	1 492	1 372	1 552
VIC	558	668	533	533	533	421	445	465	476	356	980	1 113	998	1 009	889
QLD	508	8	389	389	389	398	317	617	620	841	906	325	1 006	1 009	1 230
WA	223	250	208	208	208	223	458	459	170	159	445	708	667	378	367
SA	0	0	0	0	0	86	103	31	19	32	86	103	31	19	32
TAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NT	13	0	14	14	14	0	0	0	0	0	13	0	14	14	14
ACT	92	64	84	84	84	48	50	64	61	22	140	114	148	144	105
Multi-State	262	183	208	208	208	120	83	83	104	97	382	266	291	313	306
Australia	*2 479*	*1 892*	*2 235*	*2 235*	*2 235*	*1 882*	*2 098*	*2 411*	*2 021*	*2 258*	*4 361*	*3 990*	*4 646*	*4 257*	*4 493*

ATTACHMENT 7 – DETAILED PROJECTIONS OF COMPLETIONS, GRADUATE AND POSTGRADUATE TEACHERS – 1999 TO 2003 (CONTINUED)

	Postgraduate					Undergraduate					Total				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Initial Teacher Education (General)															
NSW	2	127	28	28	28	98	337	416	368	391	100	464	444	396	419
VIC	129	145	119	119	119	2	8	122	138	228	131	154	241	257	347
QLD	7	0	5	5	5	0	1	27	58	40	7	1	32	63	46
WA	0	152	30	30	30	0	0	0	0	10	0	152	30	30	41
SA	0	0	0	0	0	0	0	0	0	78	0	0	0	0	78
TAS	0	0	35	35	35	146	166	256	221	259	146	166	291	256	294
NT	0	0	0	0	0	1	124	116	11	28	1	124	116	11	28
ACT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Australia	*138*	*424*	*217*	*217*	*217*	*246*	*636*	*937*	*796*	*1034*	*384*	*1 060*	*1 154*	*1 013*	*1 252*
All completions															
NSW	944	934	980	980	980	2138	2394	2231	2317	2590	3083	3328	3211	3297	3570
VIC	815	913	734	734	734	1165	1286	1402	1425	1411	1980	2199	2137	2159	2146
QLD	721	23	540	540	540	1289	1312	1878	1900	2327	2010	1335	2418	2440	2868
WA	398	609	393	393	393	666	623	665	643	716	1064	1232	1059	1036	1109
SA	0	0	0	0	0	525	548	554	470	570	525	548	554	470	570
TAS	0	0	35	35	35	146	166	256	221	259	146	166	291	256	294
NT	24	26	21	21	21	83	176	203	76	91	107	202	224	97	112
ACT	92	65	84	84	84	134	151	167	200	154	226	216	251	284	238
Multi-State	262	183	208	208	208	318	289	374	381	381	580	471	583	589	589
Australia	*3 256*	*2 753*	*2 996*	*2 996*	*2 996*	*6 465*	*6 944*	*7 731*	*7 633*	*8 498*	*9 721*	*9 698*	*10 727*	*10 629*	*11 495*

Source: DETYA projections.

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